WESTERN INDUSTRY

* Diesel engine manufacturing is a sturdy Pacific Coast industry: grinding a cylinder liner for accurate polished finish.

Twenty-Five Cents VOLUME X NUMBER 4 April, 1945

The hopes of the world rest upon America --
its eyes are focused upon San Francisco.
May the prayers of humanity
be answered by a lasting peace and
freedom from fear.

VICTOR EQUIPMENT COMPANY • SAN FRANCISCO

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WHEN the Indians wanted to work up a "peeve", they called on the steady beat of war drums to drive the bucks fighting mad.

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Practically the entire medical profession agrees that modern-day noise constitutes a grave menace to the physical and mental life of all office and factory workers.

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Western Asbestos Co. offers a complete Acousti-Celotex Sound Conditioning service . . . from design to completed installation. The counsel and recommendations of a sales engineer are at your service—without obligation.

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Acoustical Engineers and Contractors

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IT'S FREE!

Ask your G-E Distributor for it

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Gentlemen:

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Title.....

Company.....

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GENERAL ELECTRIC

EDITORIAL COMMENT

The First Test of Cooperation

IT WOULD have been a distinct surprise if industry in the West immediately laid aside all its restraints, distrusts and suspicions and embarked whole-heartedly on a program of economic cooperation as a result of the Salt Lake City steel conference in February. Despite the distressing need for economic unity in the West, traditional intra-regional differences are not laid aside that easily.

But today is not the time to stand on such differences. Instead, it is time for the different sections in the Eleven Western States to realize that the entire area is first of all an interdependent economic unit, with a joint economic future. By reaching a common understanding, by united action, great things can be accomplished for the West; without this unity, great opportunities will be unrealized.

The Western States Council, which arranged the Salt Lake City conference and then appointed a committee of industrialists to follow through, is a good foundation for that much-needed economic cooperation. Whether a superstructure is built on that foundation depends upon the participation and cooperation of industry.

A frequent objection to the Council is that it is composed of chamber of commerce secretaries, who are without authority to commit their own chambers to action or power to formulate policies. But the far-sighted action of the Council at Salt Lake City put an entirely new aspect on the organization. There it was decided that industrialists should constitute the committees to ascertain economic facts and propose policies for the West, the chamber of commerce men merely performing the organization service necessary to make the work of the industrialists possible. Obviously commercial secretaries are in a better position to do the latter than presidents who are usually unable to devote continuous time and effort in such a cause.

The steel committee was very properly set up on a regional basis, with as many of the Eleven Western States represented as possible. It will not have an easy time to reconcile divergent points of view. Consequently now is the time for the partisans of Geneva, Fontana and CF&I to attempt to find the things on which they can agree, rather than to stand aloof in the belief that nothing constructive can be accomplished. And steel is only one of many vital Western problems where cooperation is essential.

Surplus Property Disposal

MANY competent observers say that the Surplus Property Act passed by Congress last year is a mess and the President signed it under protest. One of its well-intentioned features is a provision making it a criminal offense for any person in government service who has acted in connection with the disposal of any surplus property to engage in any surplus property activity for two years after he leaves the service of his country.

The intention is apparently to prevent speculators or others from attempting to induce property disposal officers to favor them with low prices on the sale of surplus goods in exchange for war jobs. Unfortunately its most likely effect is to scare able army officers and others out of surplus property work for fear that they will inadvertently become liable for prosecution after they return to civil life.

The California State Chamber of Commerce has recommended amending this and other portions of the act. It is a subject on which industrialists in the West can well write to their Congressmen and Senators, because even in Congress there is considerable dissatisfaction over the law, and some encouragement undoubtedly would lead them to get busy.

WESTERN INDUSTRY

CONTENTS FOR APRIL, 1945

OUR COVER PICTURE

• Diesel engine manufacturing on the Pacific Coast, concentrated around San Francisco Bay, has had an enormous wartime growth, but there is also an accumulated demand from industries unable to buy at present. The operation shown on the front cover is grinding an inner liner for a cylinder to get accurate finish, at Atlas-Imperial Engine Works, Oakland.

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Thor portable electric screw drivers
Reduce assembly costs—
Speeds unit operations—
Increase fabrication range—

War plant production executives in search of portable electric tools have learned to look to Thor for fast, efficient and low cost equipment. This was the line they found to be complete—not only in the kinds of tools but in the variety of models to provide the correct tool for every kind of job.

Thor tools are built for three shift industrial production work with the ample power that assures continuous service yet are so designed that weight and consequent worker fatigue is cut to a minimum.

These are just two of the reasons why the men on whom the country depends for war goods have learned to depend on Thor for portable power tools.

Just as soon as you finish making war supplies the reconversion rush will be on—the rush to prepare for civilian goods again. During this reconversion period Thor tools will be in great demand for the tremendous change-over necessary to prepare for the manufacture of peace-time articles. The post war market is estimated to be the greatest in world history. Anticipating your tool needs now you will be in a better position to meet the heavy demands for reconversion and post war production; to give your workers full employment; your company its full share of peace-time profits.

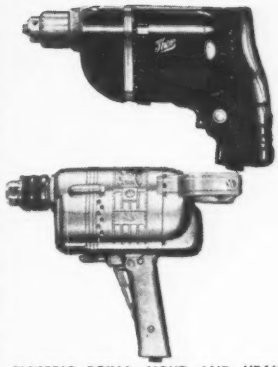
Typical of Thor developments are portable electric screw drivers which not only have brought greater speed and accuracy to assembly operations but will speed the race to rebuild peace-time production lines:—Installation of machines, wall partitions—a thousand other screw driving and nut setting jobs must be done fast to rebuild for productive output.

The tools are available in all speeds and types. The wide variety of attachments are particularly suited to various special operations to make them valuable in rebuilding for peace-time operation...essential for low cost mass production of civilian goods.

THOR TOOLS for Refrigerators

New Designs of Thor Tools

Not only will a great variety of new products be made in the future but old products will be made in a greater variety of new ways. In this need for adaptability, production men will remember that Thor has consistently led in the design and development of new and more efficient tools. Today there are more new tools in the Thor experimental laboratory than at any time in Thor history. Just as quickly as these new Thor tools are proved perfect, in laboratory and shop tests, they become a regular part of the Thor line.



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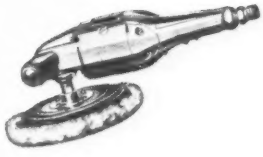

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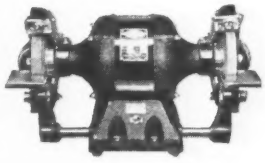

ELECTRIC GRINDERS—4", 5" AND 6" DIA. WHEEL Portable Grinders for fast grinding, wire-brushing and buffing on all metal surfaces. 6", 7" AND 10" BENCH GRINDERS in light or heavy duty types are a shop necessity.

When you are again ready . . .

to manufacture refrigerators, electric irons, toasters or whatever, Thor will have the portable tools you will need . . . engineered, designed and built for long, hard, continuous service on top speed production. Since 1893 virtually every major improvement in portable power tools has come from the Thor laboratories. That is why you can safely anticipate your tool requirements NOW and be sure of getting, with Thor, not only the *best* tools, but the tools you need when you need them most.

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① BREAKAGE AND SPILLAGE headaches have been cured by the chain belt conveyor that travels as smoothly as a table top . . . Rex Table Top. Jerky, bumpy conveyors that jarred and broke containers are a thing of the past.

② FOR EXAMPLE, the jars that ride on this Rex Table Top conveyor chain glide smoothly along, never jamming, never hesitating, never breaking or spilling. Perfectly flat, with bevel-edged links, Table Top never catches or "trips" containers at transfer points . . . slides freely from under blocked containers, preventing pile-ups, spillage and breakage.

③ SIMPLE DESIGN IS THE SECRET of Table Top's success. It's a one-piece platform link with a simple pin connection. Fewer parts mean less chance for chain trouble, greater steadiness. There are no attachments to break loose or "wobble." It stays cleaner! There are no pockets to catch and hold dirt. Driving sprockets engage the full width of the hinged joint for smooth action, greater bearing area, and long life.

* * *

Rex Table Top is the answer to any problem involving the conveying of bottles, jars or cans. The Rex Man will help you with your chain belt application problems. For complete information on Rex Table Top, write for your copy of Bulletin No. 464. Chain Belt Company, 1723 West Bruce Street, Milwaukee 4, Wisconsin.

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This was practically a miracle. In the United States, there was no knowledge of the art of rolling copper, no plant to make it in, no workers experienced in the craft.

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Keep the typist's fingers at the keyboard where they belong . . . with Uarco **continuous-strip** forms. These forms, already interleaved with carbon, automatically feed the typewriter . . . eliminate carbon fuss and bother, aligning trouble and wasteful inserting motions. Uarco **continuous-strip** record forms put an end to the "stop" in record writing.

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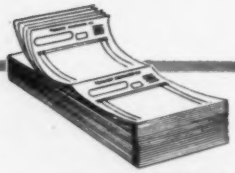

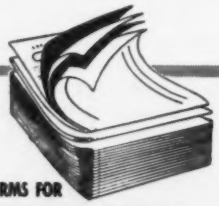

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Believed to be the highest capacity right angle reduction gear ever produced by a *generating* process, this 97½ inch diameter, 192 to one, Cone-Drive is one of a war PRODUCTION order recently produced at one of the Cone-Drive plants in Detroit.

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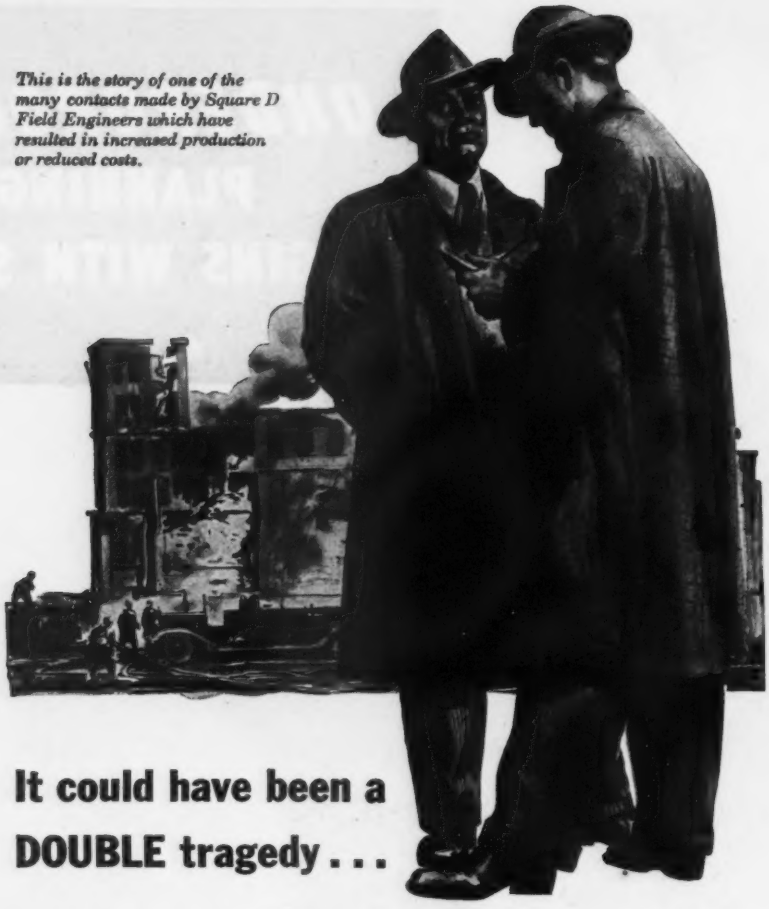

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Last fall, a large fruit canning company had a disastrously big fire. That was tragedy number one. Unless the plant could be rebuilt and re-equipped without delay, the fruit growers who depended upon the company as an outlet for their spring harvest, would be left high and dry. That easily could have been tragedy number two—for the priority situation on essential electrical equipment was extremely tight.

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Let a Square D Field Engineer Help You

In the face of today's manpower shortage, peak efficiency of your electrical control and distribution system is vital. It will be equally important in the highly competitive and narrow-margin years ahead. Now is the time to profit most by the counsel of your nearest Square D Field Engineer. This service is available through Square D branch offices in 50 principal U. S. and Canadian cities. *Write today for New Square D Digest, Just Off The Press . . . 1318 East 16th Street, Los Angeles 21, Calif.*

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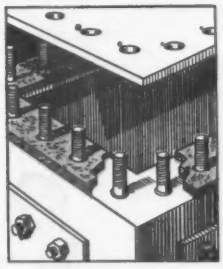
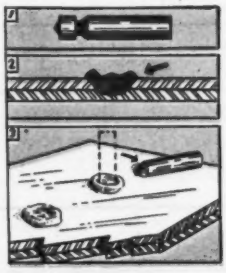
Cutaway view of welded Nelson Stud (after etching with Nital).

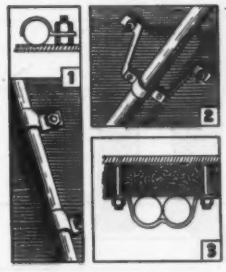
Thousands of Nelson Stud Welders are now used by more than 500 industrial plants and shipyards in applications similar to these. This process eliminates time and material consumed in hand-welding bolts, or drilling and tapping for studs. The *complete fusion* of the stud to metal is obtained *in ½ second* . . . and the resulting weld is stronger than the strength of the stud!



Inspection covers of all types can be secured with Nelson Studs. Eliminates drilling and tapping holes in the casing, or hand-welding studs. No leaking or loosening. Gaskets are placed over the studs and cover tightened down. Stud is welded in ½ second!



Plug welding is used to fasten light-gauge steel to structural steel or flat surfaces. Hole is punched in the top plate. Nelson Grooved Stud (1) is then welded through the hole to the bottom plate, fusing the two together (2). The stud is then broken off (3) and the weld bead is removed if desired.



Wiring, conduit, and pipe are quickly secured. Illustrated above are a few of the many methods used: 1. Securing conduit. 2. Securing pipe (single or multiple runs). 3. Securing wiring of all kinds over insulation materials.

For general maintenance of all kinds the Nelson Welder is excellent. It will end-weld studs to metal for any kind of repair. For securing oil lines, covers; hooks; wiring; nameplates; air lines; machinery installations; repairs; etc. It will be found that it is profitable to you both in the production line and for general work.

The Nelson Electric Arc Stud Welder

For complete details and catalog, write:

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Eastern Representative: Camden Stud Welding Corp. Dept. 122, 1416 South Sixth St., Camden, N. J.

NELSON STUD WELDERS & STUDS

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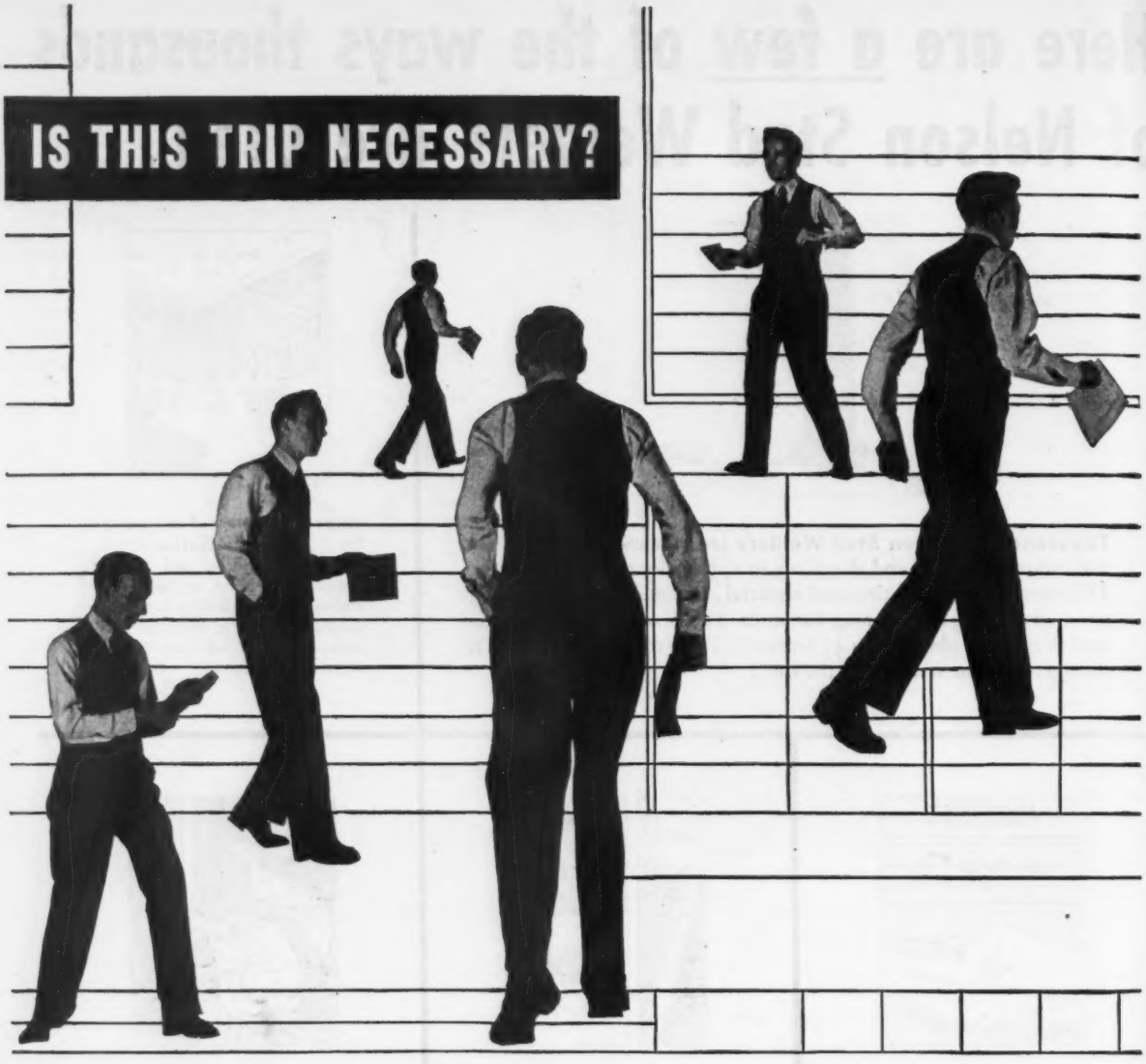

TAKE it by and large, the No. 1 headache of modern business is wasted time.

Messengers, clerks and executives traipse around correcting what could have been done right the first time by clear instructions, clearly transmitted.

Your business forms *can* be efficient. They can speed up the writing of handwritten records as much as 172%, of machine-written records, 95%. They can reduce confusion, overlapping, the cost of tedious routine. *They can be custom-built to save you thousands of hours yearly!*

The nine companies listed below have long been under Moore ownership. Now they combine under the Moore name—forming the largest company of its kind in the world. For the first time, a fund of experience so diverse as this is available *on a nation-wide scale.* Moore goes every step of the way for you, from preliminary studies to actual printing in lots of hundreds or millions.

The Moore specialist who is ready to consult with you speaks the language of your own business. Let him demonstrate now how Moore business form engineering and printing can show results. Get in touch with the Headquarters of your nearest Moore division, as listed below, or its local office.

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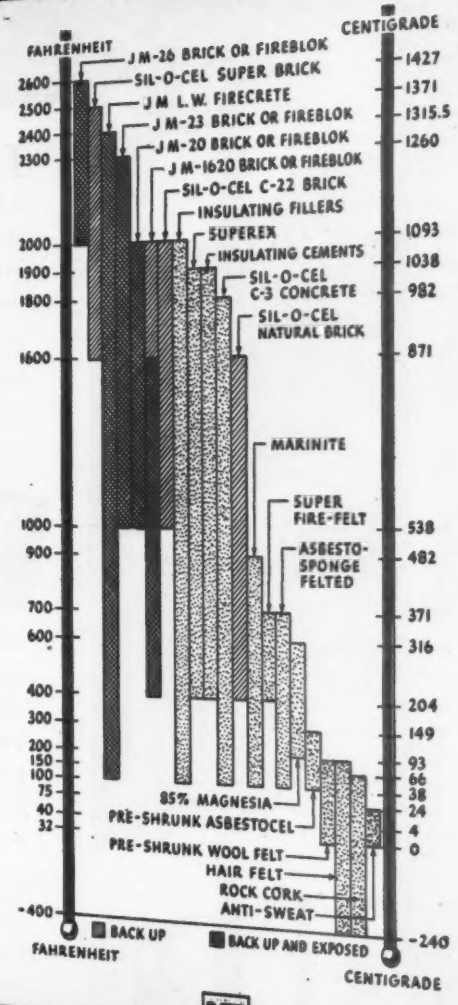

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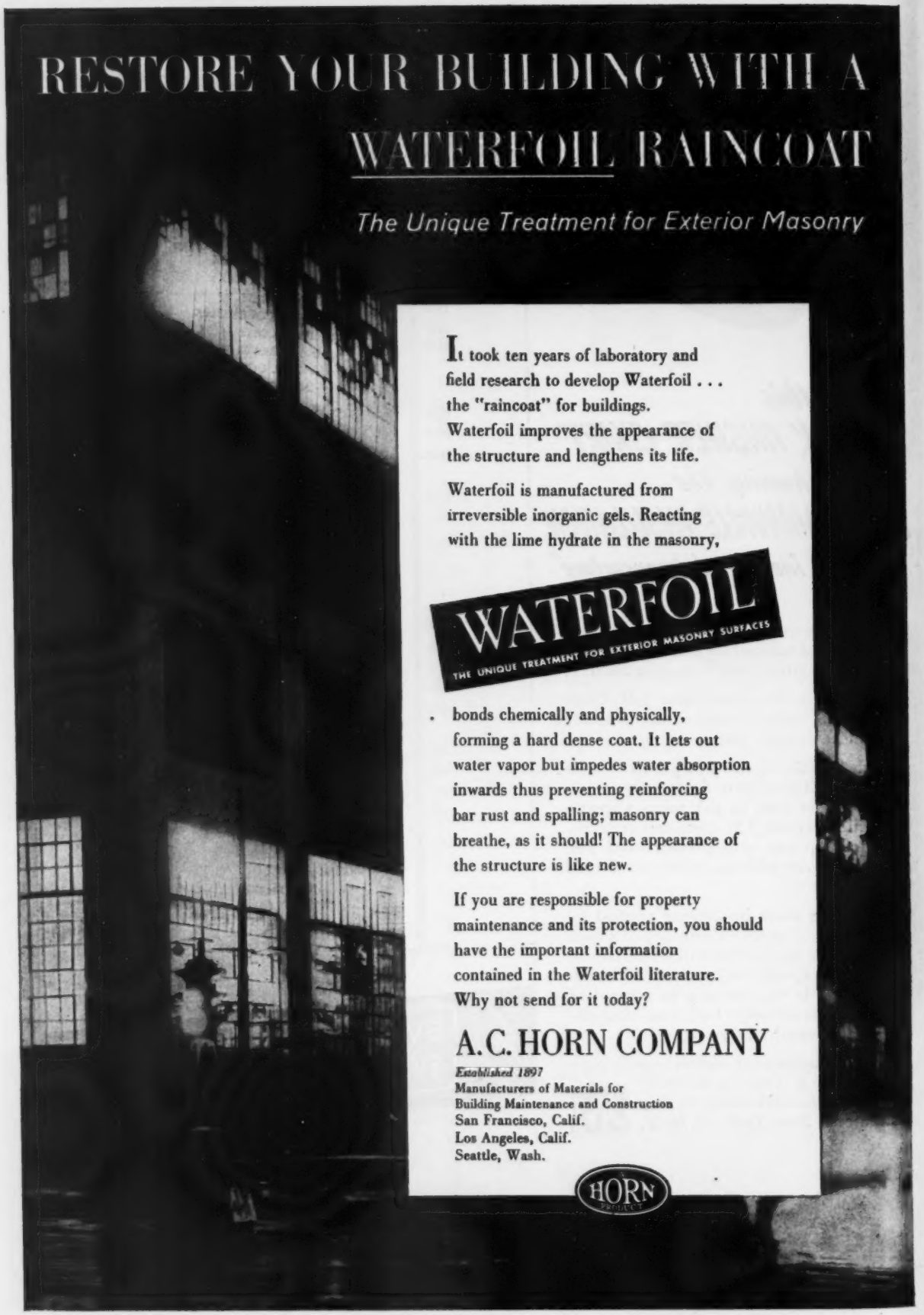
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AT RYAN, San Diego, Fruehauf Trailers haul wing sections for training planes.

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"Engineered Transportation" REG. U.S. PAT. OFF.

Getting ready for the big wind

A steam turbine is a windmill. This Joshua Hendy steam turbine, when completed, will be turned by an 1800 mile-an-hour gale of superheated steam. It will furnish the power to propel a 12,000-ton ship. It must be built in quantity to meet wartime demands. Its making must be highly precise — tolerances are as close as two ten-thousandths of an inch.

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WANTED

WOMEN TO LEARN TO OPERATE POWER INDUSTRIAL TRUCKS

Latest step-up in munitions program shifts hundreds of "truckers" into other jobs—industrial executives say proven instruction manual cuts time required to train women as proficient operators of power trucks until close of wartime emergency.

Put more women on your Power Industrial Trucks! The men you have been using on that work have grown familiar with your operations in many or all departments. Hence for the present they may be more valuable to you, elsewhere in your plant.

Use "Lady, will you give a lift?" to help women become proficient quickly. Every hour you save in training women to handle your Trucks expertly may *add a day* to your critical production—even though you keep them only until men are back on the job.

Each step explained. Based on Elwell-Parker's rich experience—written in friendly, non-technical terms—"Lady, will you give a lift?" describes each truck operation and explains its importance in detail. Now in the Third Edition—with thousands of copies distributed—this handy, pocket-size 24-page booklet will help expedite *your* women-training programs.

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'Phone: GArfield 1827

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Management Executives have said:—

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Pulp and Paper:—"Very worthwhile in the training of women—*and* men."

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POWER INDUSTRIAL TRUCKS

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RICHFIELD
HAS A LUBRICANT FOR EVERY NEED

RICHFIELD

CONSERVATION . . . THROUGH pH CONTROL

Screed hooks, form clamps and most other small steel parts used in concrete construction work are ready for the junk heap after one job even though there's nothing wrong with them that cleaning can't fix.

These parts are heavily coated with concrete and eaten with rust. Dirt, scale and paint add to the difficulty of cleaning. Ordinary chemical cleaning falls far short of removing this stubborn conglomeration of deposits and corrosion and sets up the metal surfaces for ruinous attack by rusting. "Rattling" cleans the parts in a rough fashion, but it can never remove all the dirt and rust and it damages many of the parts.

The C. P. Concrete Equipment Company of Los Angeles is successfully cleaning thousands of these parts by simple immersion in a series of cleaning baths set up by a Kelite Service Engineer. This new process reclaims parts like the screed hooks above . . . cleans them and protects them against re-rusting . . . without requiring expensive equipment or skilled labor.

A simple series of immersions is all that is needed to make these metal parts as useful as though they were brand new. They can be delivered to concrete contractors for use on new jobs at a great saving in man hours, money and metal.

This is a typical application of scientific cleaning through pH Control. Wherever there's dirt, grease, grime, scale, corrosion or any other undesirable deposit or contamination, Kelite materials with pH Control can solve the cleaning problem.

Chart Copyright 1942 by Kelite Products, Inc.

Call or write for the Kelite Service Engineer who serves your territory with a practical knowledge of scientific cleaning through pH Control.

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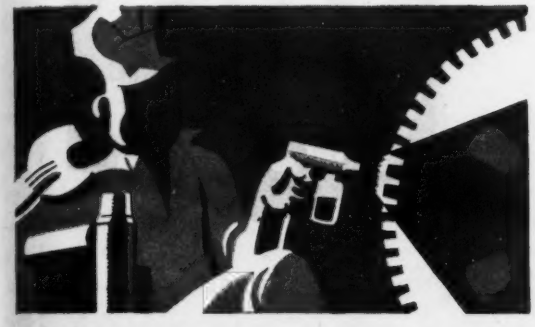
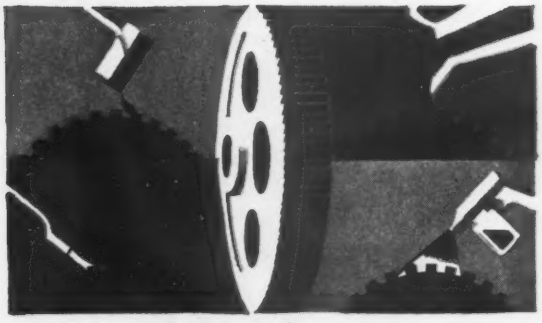
KELITE PRODUCTS, INC. 909 E. 60th St., Los Angeles 1, Calif. *Manufacturing Plants in* Los Angeles, Chicago, Perth Amboy, Houston, *Western Service Offices in* Seattle, Spokane, Portland, Berkeley, San Francisco, Sacramento, Honolulu, Los Angeles, San Bernardino, San Diego, Phoenix, Salt Lake City, Denver, El Paso, San Antonio, Houston, Dallas, Oklahoma City, Tulsa, Kansas City, St. Louis, Minneapolis.

SPRAY ON THIS SPECIAL GREASE FOR EXPOSED GEARS



1 You can easily apply Gearite to exposed gears, for it contains a solvent that evaporates after application, leaving a smooth, evenly-distributed coating of grease to protect every tooth and working surface.



2 For this reason, Gearite does not require heating but can be applied immediately by any method—drip cup, direct pouring, paintbrush or spray gun. It is dyed black so that you can plainly see its complete coverage and tell at a glance when a new coat is needed.

3 Although fluid enough for ready application, Gearite is heavy, tacky, and highly adhesive. It resists squeezing out under the tremendous pressure of the largest bull gears and it forms an effective cushion against metal-to-metal contact under the toughest conditions.

4 Gearite will not harden and flake off in cold weather or wash away in the presence of water. It does not throw off at high speeds. It does not become dry and brittle but retains its normal characteristics during periods of machinery idleness.

5 In short, Gearite is the answer to your every problem in lubricating exposed gears. Made especially for that purpose by Union Oil Company, Gearite is the outstanding laboratory-developed, industry-tested gear lubricant. Begin now using this easy-to-apply protection

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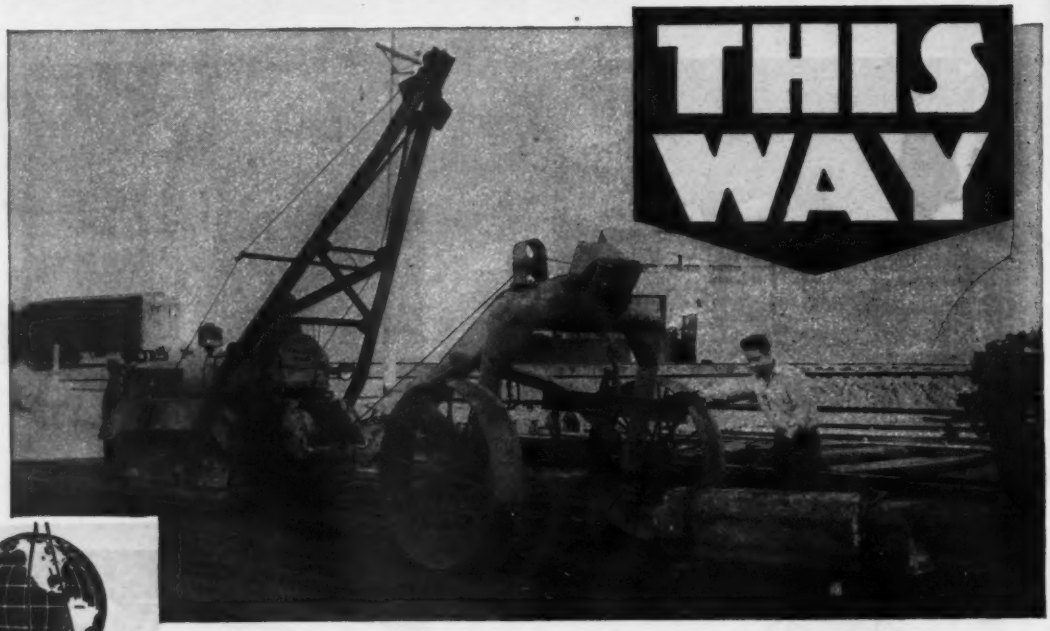
Timken solved a MOVING-STORAGE PROBLEM



Using a "Caterpillar" D4 tractor, equipped with HYSTER Towing Winch and drawing a HYSTER Sulky, the movement of steel to the forge shop, and from the shop to outside yard storage, was satisfactorily solved at the Canton, Ohio plant of Timken Roller Bearing Company. BY THIS MEANS, THIS COMPANY SAVED THE EXPENSE OF PROVIDING ANOTHER BUILDING WITH AN OVERHEAD CRANE.

Beside being ready and available for other towing jobs, or for hoisting services, this HYSTER equipment is more than paying for itself on the above-mentioned job. Mobile equipment, heavily-loaded trucks and the like, will never stay bogged down in the mud with a HYSTER winch and "Caterpillar" tractor on the premises.

Perhaps you, too, have a knotty problem in plant and yard transportation — the HOISTING OF MATERIALS, THE SPOTTING OF HEAVY EQUIPMENT. Perhaps some of these methods, and some of this equipment, will suggest a solution. We'll gladly work with you to that end. Or, consult your "Caterpillar" dealer.

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WORLD'S LARGEST MANUFACTURER OF TRACTOR HOISTS AND WINCHES

Spotlight on the NEWS

WESTERN INDUSTRY
FOR APRIL, 1945

VOLUME X NUMBER 4

Future Already Financed

$2½ billion of industrial facilities set up in the eleven Western states in the war period (pages 25-27) by government and private financing, and what are we going to do with them? Some will have to be written off altogether, as useful only for war purposes. Others will be written down to a figure where someone can afford to pay for them and stand further expense in converting them to peacetime usage. And a lot more are worth nearly their wartime cost and are usable either just as they stand or practically so. All in all, it is a huge long-term investment in the West's industrial future, and the possible spectacular abandonment of a few shipyards or aircraft plants will be offset by the continued operation of a vast number of smaller facilities.

Multitude of Opportunities

Those with a gloomy outlook on the future would do well to study the next article in this issue (pages 38-40) indicating some of the uses for aluminum. Aluminum plants had to be shut down last fall because aluminum was "running out of our ears." In peacetime, however, big stocks of aluminum ingots on hand merely suggest possibilities for converting them to new products, and demand eventually catches up to supply. Fabricators of other Western materials—magnesium, copper, steel, lumber, plywood, plastics, chemicals, for example are not waiting for the world to tread a beaten bath to their doors, but are actively planning every day to provide things needful and desirable after the war.

Not Just Like Dominoes

In Utah, where the industrial community is comparatively compact, it was thought last year that it would be possible to cut the manpower ceilings 50 per cent in certain less essential, or unessential, industries. The experiment was tried (page 41) but it failed to work, not because management or labor balked, but simply because there wasn't that much manpower margin. Some typical industrial establishments, for example, had a male proprietor over 50 years of age and several women assistants. In others, the available manpower that could do a good job at a desk, behind a counter, or at a shop bench where the effort was not heavy, simply couldn't stand the dark underground and heavy labor in Utah's most critical industry, mining. Nevertheless, the incidental results were worth the effort, which is probably the answer to many manpower campaigns.

Western Efficiency

Last year the West Coast aircraft industry produced 25,189 planes, with more than 5,500 equivalent units for spare parts, which is nearly 6,000 more planes than were manufactured in the entire country in 1941. Brigadier General Stace of the Air Service Technical Command reports (pages 42-44) that this was done with a production efficiency in December 1944 of .90 man-hours per pound, compared with a national average of 1.05 man-hours per pound for the same month. This would seem to *Western Industry* to indicate that the newer industries where the rest of the country has no experience factor in its favor, our labor force and our management are more efficient. To be sure, terrible tales are to be told about the inefficiency of Western manufacturing operations compared with older Eastern factories, but the figures above give the impression that we have a very good chance of catching up. However, General Stace isn't trying to sell a bill of goods for the West in his article. What he wants to get over is that the heat is still on and no one connected with the aircraft industry in the West can afford to slow up until both Germany and Japan have folded up.

Washington Scans Geneva

Telescopes have two ends. Consequently what looked like a big and immediate problem to Westerners who eagerly and anxiously watched the recent Salt Lake City steel conference seems rather a far-off matter back in Washington. Nevertheless, there are a number of things apparent on the horizon at Washington (pages 47-48) that no one except Senator Brewster touched on at Salt Lake, namely, the government's policy about Geneva and other big war facilities, which may be considerably different than the supposedly pure economics discussed by everyone else. Our Washington editor sums the situation up very carefully, and also rings in a new figure on the scene, a Dr. Duncan who is conducting a "levels of traffic" study that may be an outstanding factor in the future of freight rates.

Going In for Assembly

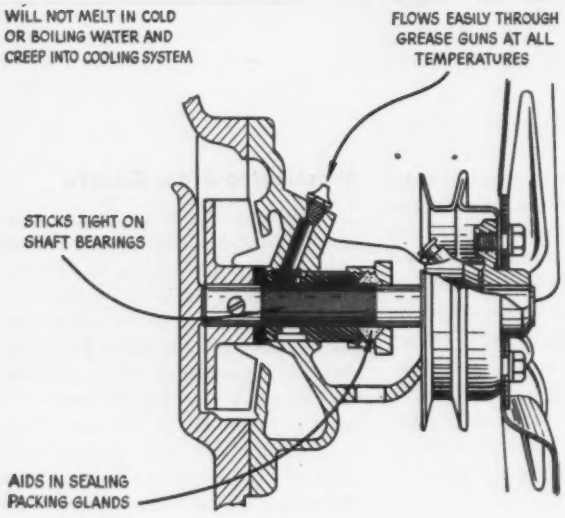
Some industrialists figure that the West's best chance in the immediate postwar period is to get into assembly operations on products manufactured in the East, either for export or domestic Western distribution. Willamette Iron & Steel Corporation in Portland (pages 45-46) are in the midst of such work at the present time, namely, assembling locomotives for lend-lease shipment to Russiæ. As Portland is the lend-lease port for the Pacific Coast, other assembly operations may follow. Even if the lend-lease spigot is turned off, it seems likely that Russia will want to continue ordering equipment.

No Folded Hands Here

San Diego doesn't look to be sustained by the aircraft industry after the war, or wrecked by shrinkage in it. An industrial survey (page 44) indicates that its various manufacturers have other plans for the future, which bears out the philosophy of the first two "Spotlight" flashes on this page.

STANDARD ENGINEERS NOTEBOOK

Waterproof grease prevents clogging



Where truck and other engines are equipped with grease-lubricated water pumps in which cooling water comes in contact with grease, RPM Water Pump Grease is recommended.

RPM Water Pump Grease is especially compounded to make it waterproof. Neither hot nor cold water will change its characteristics. Because it has an extremely high melting point, high engine temperatures and boiling water will not cause it to melt and creep into the cooling system. Thus, the formation of grease scum on water, which tends to clog radiator tubes and other passages, is prevented.

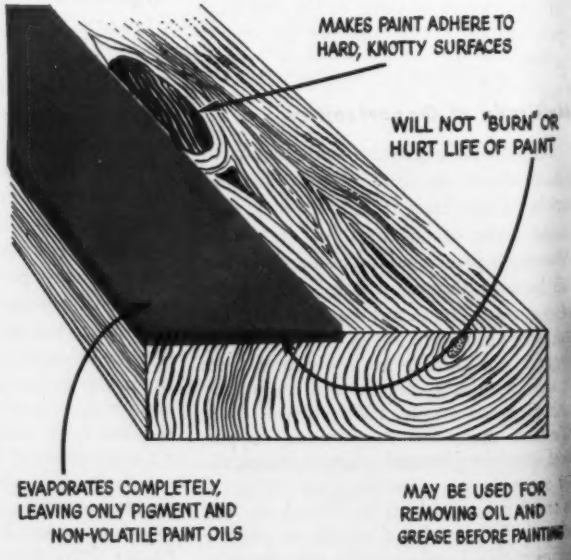
Highly resistant to change in structure, RPM Water Pump Grease sticks tight on whirling pump shafts. This not only prevents waste, but assures lubrication of pumps over extended periods. It forms a waterproof seal in glands, preventing leaks, keeps a protective film on bearings, and pumps freely through grease guns in all seasons.

Thinner lowers cost, penetrates deeper

Manufactured primarily for use in reducing paints and varnishes, Standard Compounded Paint Thinner is a compounded product for use in place of turpentine. It carries pigments and non-volatile oils into hard surfaces, produces a long-lasting job and provides a good "tooth" to hold succeeding coats.

Standard Compounded Paint Thinner is very economical because not only is its initial cost low, but it requires less to reduce paint or varnish to a desired consistency. This is particularly important now when stocks are limited due to war restrictions. It has no unpleasant vapors, making it especially desirable for inside painting.

Evaporating completely, Standard Compounded Paint Thinner assures a job that will not "blister" or "burn." It evaporates at a steady rate—fast enough to allow drying in a reasonable time and slow enough to prevent paint or varnish from thickening while being used.



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STANDARD OF CALIFORNIA

$2½ BILLION NEW INDUSTRIAL FACILITIES ON HAND IN WEST . . .

Preliminary Survey of Wartime Investment by Government and Private Capital Shows the Opportunities (and Problems) Ahead

By EDWARD D. LANDELS
Chairman, Statewide Committee on Surplus Property Disposal, California State Chamber of Commerce

AFTER the last shot is fired in the present global war, what will the eleven Western states do with their more than $2,532,000,000 of war-born industrial facilities whose existence was not justified by the prewar economy?

This question cannot be answered fully at this time because all the facts as to the nature of these facilities are not available. However, a recent breakdown of the money invested in wartime industrial plants by industry groups, as prepared by the Research Department of the California State Chamber of Commerce, indicates some of the fundamental problems and their magnitude.

The total investment in the West's wartime industrial facilities is higher than the $2,532,000,000 shown in the accompanying tabulations. Not included in this total are all projects below $25,000 and facilities whose locations cover more than one state.

If it is logical to assume that these additional projects are distributed among the various states in the same ratio as the tabulated facilities, approximately $564,000,000 can be added to the $2,532,000,000. This would add $295,000,000 to the California total and $386,000,000 to the total for the three Pacific Coast states.

A substantial portion of the $564,000,000 undoubtedly represents improvements and additional equipment added to a large number and wide variety of small businesses whose reconversion problems are relatively simple. In many instances, it seems probable that as a result of this wartime expansion of equipment small firms will be better equipped to compete in peacetime production in the postwar era than they were before the war.

The following comments regarding various industries seem justified by the tabulations:

Aircraft Engines and Parts

In this field the eleven Western states have about nine per cent of the nation's total. California has about 6.6 per cent. Privately financed is $84,000,000 of the $300,000,000 total for the West.

Many of the plants are very large. What may constitute a sound economic location for an airframe or engine plant, may not be suitable at all for many other manufactures which would require similar conditions of factory space and lay-out. Wide aisleways, high ceilings, and long assembly lines are the rule in plants handling assembly of the heavier aircraft.

Such plants are expensive to build, heat, and maintain, and would require considerably more investment than most industrialists would desire for ordinary types

Enough repair work is ahead to keep some West Coast shipyards from being listed as surplus for several years. Here is the interior of one of the 32 floating drydocks built by Pacific Bridge Company at Alameda. A score of them have been towed to the Pacific combat areas. Richmond Yard No. 3 will outfit for sea duty four which were lately used at United Engineering Co., Vallejo-San Diego.

COST OF MANUFACTURING FACILITIES EXPANSION—WESTERN STATES

From July 1, 1940, through June 30, 1944

(Figures in millions of dollars)

State and Region	Federally Financed	Privately Financed	Total	% of U.S. Total
Total—All Manufacturers				
California	$ 952	$ 409	$ 1,361	7.05
Oregon	92	20	112	0.58
Washington	281	25	306	1.58
Pacific Region	1,325	454	1,779	9.21
Arizona	65	34	99	0.51
Colorado	125	12	137	0.71
Idaho	22	3	25	0.13
Montana	....	5	5	0.03
Nevada	143	1	144	0.75
New Mexico	6	11	17	0.09
Utah	281	5	286	1.48
Wyoming	24	16	40	0.21
Mountain Region	666	87	753	3.91
Total 11 West. States	1,991	541	2,532	13.22
Total 48 States†	15,160	4,150	19,310	100.00
Aircraft Engines and Parts				
California	$150	$ 79	$229	6.63
Oregon	1	1	2	0.06
Washington	38	3	41	1.19
Pacific Region	189	83	272	7.88
Arizona	18	1	19	0.55
Colorado	4	....	4	0.12
Wyoming	5	....	5	0.14
Mountain Region	27	1	28	0.81
Total 11 West. States	216	84	300	8.69
Ship Construction and Repair				
California	$409	$ 24	$433	20.55
Oregon	57	3	60	2.85
Washington	115	6	121	5.74
Pacific Region	581	33	614	29.14
Combat and Other Motorized Vehicles				
California	$2	$3	$5	0.84
Oregon	....	(*)	....	....
Washington	1	(*)	1	0.17
Pacific Region	3	3	6	1.01
Colorado	....	(*)	....	....
Idaho	....	(*)	....	....
Montana	....	(*)	....	....
Utah	....	(*)	....	....
Guns and Ammunition				
California	$ 38	$4	$ 42	1.82
Washington	3	(*)	3	0.13
Pacific Region	41	4	45	1.95
Colorado	51	1	52	2.26
Idaho	22	(*)	22	0.95
Nevada	1	(*)	1	0.04
New Mexico	....	1	1	0.04
Utah	36	(*)	36	1.56
Mountain Region	110	2	112	4.85
Total 11 West. States	151	6	157	6.80
Explosives and Ammunition Loading				
California	....	$1	$1	0.04
Washington	....	(*)	....	....
Pacific Region	....	1	1	0.04
Colorado	$64	....	64	2.55
Utah	5	....	5	0.20
Mountain Region	69	....	69	2.75
Total 11 West. States	69	1	70	2.79
Machine Tools and Other Metal Working Equipment				
California	$1	$3	$4	1.28
Pacific Region	1	3	4	1.28
Colorado	....	(*)	....	....
Mountain Region	....	(*)	....	....
Total 11 West. States	1	3	4	1.28
Machinery and Electrical Equipment				
California	$7	$15	$22	2.62
Oregon	....	1	1	0.12
Washington	....	1	1	0.12
Pacific Region	7	17	24	2.86
Arizona	....	(*)	....	....
Colorado	....	(*)	....	....
Utah	1	....	1	0.12
Wyoming	....	(*)	....	....
Mountain Region	1	....	1	0.12
Total 11 West. States	8	17	25	2.98
Iron and Steel—Basic and Semi-Finished				
California	$117	$33	$150	7.41
Oregon	3	3	6	0.30
Washington	7	(*)	7	0.35
Pacific Region	127	36	163	8.06
Colorado	....	6	6	0.30
Idaho	....	(*)	....	....
Utah	216	(*)	216	10.68
Wyoming	....	3	3	0.15
Mountain Region	216	9	225	11.13
Total 11 West. States	343	45	388	19.19
Non-Ferrous Metals—Basic and Semi-Finished				
California	$ 85	$12	$ 97	6.92
Oregon	20	1	21	1.50
Washington	111	1	112	7.99
Pacific Region	216	14	230	16.41
Arizona	47	30	77	5.49
Colorado	....	1	1	0.07
Idaho	....	(*)	....	....
Montana	....	3	3	0.21
Nevada	134	(*)	134	9.56
New Mexico	....	1	1	0.07
Utah	....	2	2	0.14
Mountain Region	181	37	218	15.54
Total 11 West. States	397	51	448	31.95
Chemicals, Coal and Petroleum Products				
California	$139	$162	$301	10.61
Oregon	7	3	10	0.35
Washington	5	3	8	0.28
Pacific Region	151	168	319	11.24
Arizona	....	(*)	....	....
Colorado	6	1	7	0.25
Montana	....	1	1	0.04
Nevada	8	(*)	8	0.28
New Mexico	6	9	15	0.53
Utah	22	1	23	0.81
Wyoming	19	13	32	1.13
Mountain Region	61	25	86	3.04
Total 11 West. States	212	193	405	14.28
Food Processing and Other Manufacturing‡				
California	$4	$ 73	$ 77	8.40
Oregon	4	8	12	1.31
Washington	1	11	12	1.31
Pacific Region	9	92	101	11.02
Arizona	....	3	3	0.33
Colorado	....	3	3	0.33
Idaho	....	3	3	0.33
Montana	....	1	1	0.11
Nevada	....	1	1	0.11
New Mexico	....	(*)	....	....
Utah	1	2	3	0.33
Mountain Region	1	13	14	1.54
Total 11 West. States	10	105	115	12.56

†Not included in these figures are $4,195,000,000 in projects of less than $25,000 and facilities whose locations cover more than one state.
(*) Less than $500,000.
(‡) The distribution by state is available for only 24% of this product group. Source: WPB, Industry and Facilities Division.

% of U.S. Total
2.62
0.12
0.12
2.86
—
—
0.12
—
0.12
2.98
7.41
0.30
0.35
8.06
0.30
—
10.68
0.15
11.13
19.19
6.92
1.50
7.99
16.41
5.49
0.07
—
0.21
9.56
0.07
0.14
15.54
31.95
10.61
0.35
0.28
11.24
—
0.25
0.04
0.28
0.53
0.81
1.13
3.04
14.28
8.40
1.31
1.31
11.02
0.33
0.33
0.33
0.11
0.11
—
0.33
1.54
12.56

ate.

of manufactures. The larger aircraft industries will probably wish to occupy a percentage of their respective facilities equal to what their postwar business will warrant.

Ship Construction and Repair

The Pacific Coast has about 29 per cent of the national total expansion in this field, representing an investment of $614,000,000 of which $581,000,000 is Federally financed.

Reconversion of the shipbuilding industry could be divided into two problems: (1) disposition of ways, and (2) conversion of prefabrication facilities. Some of the prefabrication plants may have postwar possibilities in other steel fabrication, such as for railroad rolling stock and for public and private works. Some of the facilities will be utilized for repair and conversion of merchant vessels immediately after the war.

It has been suggested that some facilities be transferred to standby status. This would involve certain technical considerations, owing to the temporary construction and the haste with which some shipways were built. Further, there is the problem of their rapid depreciation next to salt water.

Combat and Other Motorized Vehicles

The eleven Western states have had little to do with the expansion of this phase of war manufacturing. Expansion here in the West is around one per cent, or $6,000,000 of the national total. Compared with other manufactures, these facilities are a lesser postwar problem.

Guns and Ammunition

From July 1, 1940, through June 30, 1944, in the West there was a total of $157,000,000 invested in facilities of this type. Of this total, $6,000,000 was privately financed. California has a total of $42,000,000, of which $4,000,000 is privately financed.

The making of these products is largely a process of metal working, and some is being done by converted facilities. This type of manufacture requires a great many specialized precision machine tools. After the last war, owing to their specialized nature, tools of this type were difficult of disposition. The foundries and less specialized machine tools can be used in postwar production of durable goods.

Explosives and Ammunition Loading

Of a total of $7,000,000 spent in the eleven Western States in this category, approximately $1,000,000 was privately financed. In general, the explosives manufactured in these facilities are useful only in war and cannot be used in mining and other blasting purposes. Location and layout are the factors which make it difficult to find peacetime uses for these facilities.

Each plant usually consists of a number of small, widely separated buildings dispersed over a considerable acreage to avoid explosion hazard. They are usually located in cheap waste land in rural areas away from population centers. Lumber shortages may make possible recoupment of a small percentage of the government's investment by sale for salvage. Those constructed of masonry present more of a problem.

Iron and Steel—Basic and Semi-Finished

Investment in these facilities in the eleven Western states, is a total of $388,000,000, of which $45,000,000 is private capital. In California are new facilities costing $150,000,000 of which $117,000,000 is Federally financed. Construction of the Geneva and Fontana plants absorbed the greater part of the $388,000,000.

Some $70,000,000 of additional facilities are said to be needed at Geneva and Fontana before they can produce steel in the shapes the West will require in peacetime. The effect of the postwar operation of these plants upon the cost of steel delivered on the West Coast will in turn influence the future industrialization of the West.

Non-Ferrous Metals—Basic and Semi-Finished

In the eleven Western states is 32 per cent of the national total expansion in this group. Of a $448,000,000 total for these states, $51,000,000 is privately financed. Among the metals, in value of facilities, the greatest increase has occurred in the non-ferrous group. New light metal production has outstripped demands.

Wartime expediency resulting in poor economic locations in some of these plants may make it difficult for them to compete in postwar markets, even if there should not be excessive light metal capacity. Whatever happens in the light metals industry, the West, with nearly one-third of the United States' total wartime expansion, will feel the results.

Machine Tools and Other Metal Working Equipment

Machine tool manufacturers are fairly centralized in the industrial areas of the East. Consequently, only about 1.3 per cent of the wartime expansion occurred in the eleven Western states, most of this being in California.

Immediately after World War I, the industry found its future jeopardized by inconsistent policies on the disposal of surplus tools. Reconversion and the future welfare of the industry after the war will depend to a large extent upon the Government's policy on disposition of war-created surpluses. After the war, facilities will be required to the extent of production of the difference between the total current demand and the rate of disposal of Government stocks.

Machinery and Electrical Equipment

The eleven Western states have approximately three per cent of the national total expansion of this product group. Privately financed is $17,000,000 of the $25,000,000 total for the Western states.

The shipbuilding program and the need for radio and radar equipment were responsible for the bulk of the expansion throughout the country. Perhaps the West needs these facilities for an integrated, balanced postwar economy. Facilities for manufacture of heavy machinery, such as reduction gears for ship propulsion, may offer a problem, depending upon their location.

The electrical and light machinery industries will have much to do in catching up on the deferred consumer needs of such durables as radios, vacuum cleaners, refrigerators, washing machines, business machines and so forth. If prewar lines are offered as first models, conversion can proceed very rapidly. New models will require the time necessary for engineering, experimentation, planning, and tooling up.

Chemicals, Coal and Petroleum Products

In this field in the eleven Western states there has been a $405,000,000 expansion, or about 14 per cent of the national total. Non-federal sources provided $193,000,000.

In this expansion are included facilities for production of alcohol for synthetic rubber, catalysts for aviation gasoline, ferrous products, alumina for metals, and base stock for plastics.

Synthetic rubber plants are almost entirely government financed. There existed little prewar capacity, but the national output as of October, 1944, was 850,000 long tons per year. Prewar consumption was about 550,000 long tons per year. The Government's postwar policies will determine the fate of most of the rubber manufacturing facilities.

Throughout the industry, expansion in petroleum processing has been mostly for aviation gasoline. Part of these facilities could be used later to improve postwar motor fuels.

Food Processing, Other Manufacturing

In this group approximately 12.5 per cent of the national total expansion is in the eleven Western states. Approximately 11 per cent of the national total is in the Pacific region and 8.4 per cent in California.

Disposition of Facilities

Sale of these facilities to their operating companies is the most logical disposition in most cases and the one which ordinarily should give the government the greatest recoupment on its investments. Not all the plants, however, will be purchased by their operating companies.

When DPC completes descriptive brochures for each facility, a more comprehensive analysis of the problem can be had.

Postwar Uses Of Aluminum From Pacific Northwest . . .

• Examples of hand hammered ware indicate aluminum's many artistic uses

THE post-war world will find aluminum better suited to the needs of everyday living than it was in prewar days. To the basic advantages possessed by this metal have been added many improvements brought about as a result of war time experience.

Since aluminum was first made commercially available a little more than 50 years ago, its story has been one of steady progress. From comparative obscurity to a position of fifth place in the world's metals within the span of half a century constitutes a significant record.

• Plastic coated aluminum foil envelope for powdered coffee. Standard in Army's "K" ration. Heat sealed, protects the contents under all conditions.

Perhaps the most obvious of aluminum's advantages is that of light weight. Possessing a specific gravity approximately one-third that of steel, the metal is widely used in places where weight saving is important.

Today's streamlined trains, constructed of light, strong aluminum alloys, glide over the rails with greater economy, and at speeds unheard of a few years ago. The first all-aluminum streamlined train, "City of Salina," was placed in service by Union Pacific in 1934. Since then more than 12 all-aluminum units have been constructed.

Not only passengers but freight as well, will travel in aluminum railroad cars after the war. The Missouri Pacific Railroad recently ordered the construction of 24 aluminum hopper cars designed to carry sulphur and coal, while a revolutionary new type of aluminum box car has just been completed for service on the Great Northern Railroad.

Thousands of pounds lighter, these cars will carry more pay load without any increase in their overall weight. Experiments have proved the feasibility of aluminum side rods for steam locomotives. Light weight aluminum rods reduce "rail hammer."

Almost everyone is familiar with the use of aluminum pistons in automobile engines. Lighter pistons are easier to stop and start at the end of each stroke which permits smoother engine operation. Aluminum cylinder heads have also been used successfully. Aluminum truck bodies carry a wide variety of products from coal to milk. Lighter weight means greater economy which is the aim of every automotive engineer.

Modern bombers and fighter planes are constructed chiefly of strong aluminum alloys. The new B-29 "Superfortress" uses more than 50,000 pounds of aluminum in its wing structure, fuselage and engines. Smaller planes use proportional amounts. So important to aviation has aluminum been during this war that until recently approximately 90 per cent of our country's entire output of the metal has been required to meet our aviation needs.

Other examples of the light weight of aluminum are numerous. Wheelbarrows have been made of this metal; both hand

By
C. S. THAYER
Works Manager,
Vancouver Works
Aluminum Company
of America

and mechanically operated shovels have been constructed of light aluminum alloys. Almost a million pounds of weight was saved a few years back in the construction of a highway bridge in Pittsburgh through the use of aluminum alloy structural parts in the floor system. Beer barrels, gasoline drums and chemical carboys have all been lightened through the use of aluminum.

Resistance to chemical attack constitutes another advantage of aluminum. In the modern laboratory the metal is employed for all manner of fittings, kettles and tanks. Many chemical products are safely handled in aluminum, including sulphur and acetic acid. In the textile industry, where metal parts come in contact with various types of acids, aluminum has a myriad of applications.

Aluminum is a good conductor of electricity. In fact aluminum cable, steel reinforced, (known to the trade as A.C.S.R.) is used in all parts of the country for the transmission of high voltage power. Substations frequently employ aluminum busbar for heavy duty current carrying. Tubular aluminum bus conductors are employed at switching and transformer stations.

Radio has made wide use of aluminum. Your own home radio undoubtedly has aluminum shields and condenser. The transmitting television antenna on top of the Chrysler Building in New York is formed of four aluminum arms.

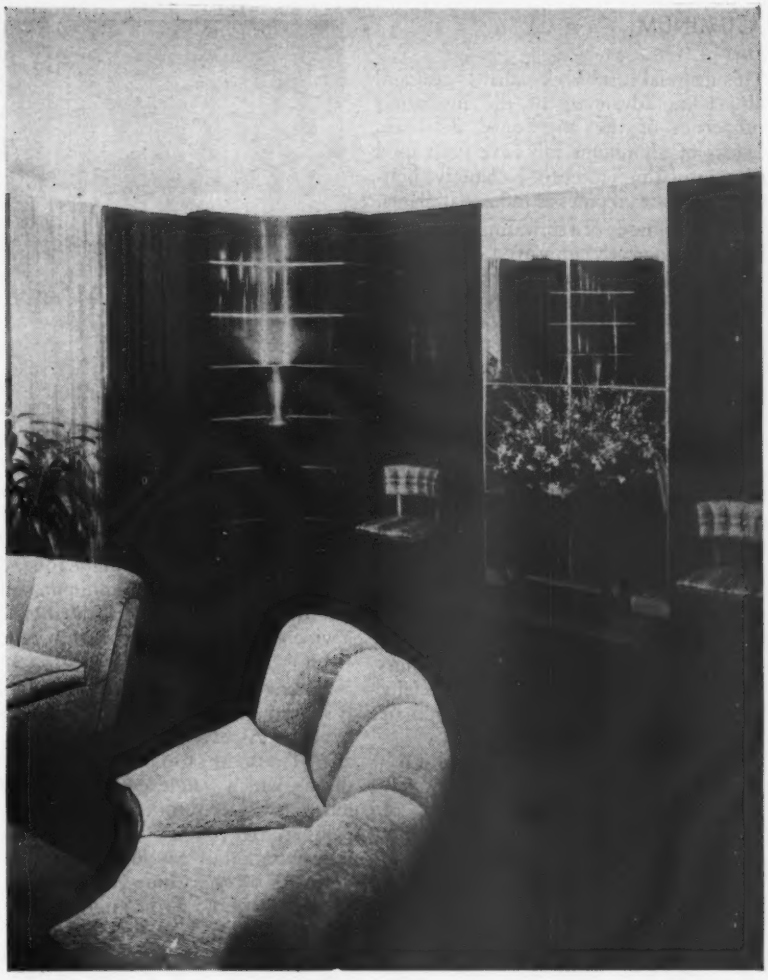
The fact that aluminum is a good conductor of heat is no surprise to the American housewives who have used aluminum cooking utensils for more than four decades. The high thermal conductivity of aluminum is also useful in many other types of equipment.

For example, the chemical industry uses this metal for vats, coils and heat exchangers. Modern tartaric acid plants employ aluminum jacketed kettles to permit rapid cooling of the acid in order to crystalize the substance. The ice cube tray in your home refrigerator is actually a heat exchanger, which removes heat from the water and transfers it to the refrigerator coil.

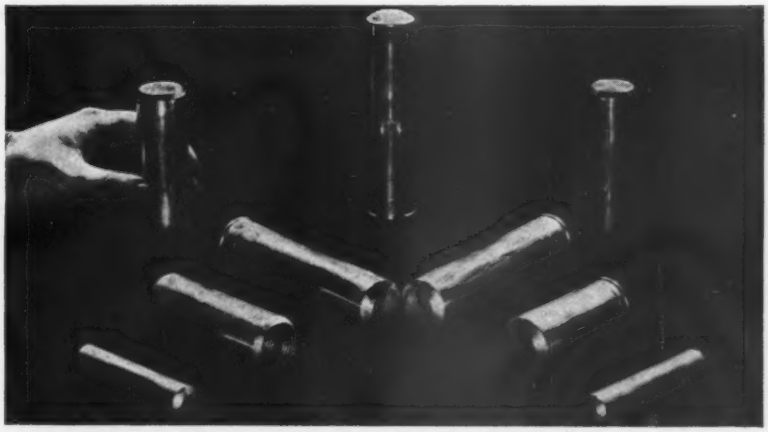
The heat and light reflecting properties of polished aluminum sheet constitute the basis for a number of interesting uses for the metal. Many of our modern ball parks are equipped with flood lighting for night games, and in most cases the reflectors for these lights are made of bright aluminum sheet. Many of our large refineries use aluminum paint on storage tanks to reflect the hot rays of the sun and reduce interior temperatures, thereby cutting down evaporation losses.

An interesting use for aluminum foil is seen in a type of insulation which is formed by applying crumpled layers of foil to the walls and roofs of buildings.

(Continued on Page 40)



• Walls of colored sheet, natural trim, mesh draperies, all of aluminum



• Aluminum container with semi-rigid walls, capable of hermetic sealing, usable for packaging foods, drugs and a wide variety of other products.

ALUMINUM

(Cont'd from Page 39)

This material turns back radiated heat and also takes advantage of the insulating properties of the imprisoned dead air. Layers of aluminum foil have been used as an insulating jacket for locomotive boilers and for steam pipes in industrial plants.

Many methods of fabricating aluminum have been greatly improved during the war. Aircraft companies, working in conjunction with Alcoa engineers to improve their products and methods, have developed better ways of welding, brazing and riveting aluminum which will be directly applicable to post war uses.

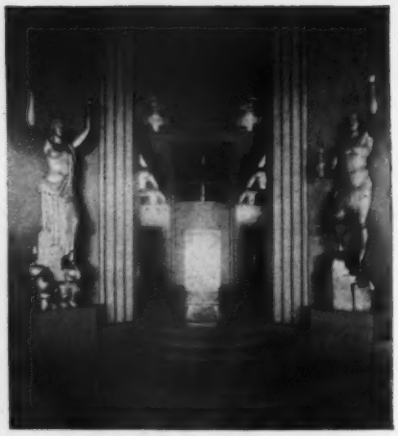
It has been found through experimentation that many types of aluminum rivets will retain their workable properties for long periods of time if kept cold. Small portable refrigerator units are used in aircraft factories to hold the aluminum rivets at the desired temperature right up until the time they are used.

With higher speed tools and machines have come improved aluminum alloys to keep pace with them. A free cutting aluminum alloy has been developed especially for use in the large scale production of small ordnance parts and fittings.

Because aluminum is non-toxic and has no affect on food products, it is extensively used in the processing and packaging of foods. Aluminum foil hoods covered the tops of pre-war milk bottles. Aluminum foil wrapped candy bars, yeast, chewing gum, and a host of other items were found in every corner store, a decade ago, and will undoubtedly be found there again when foil is once more available.

At the present time aluminum foil is handling many vital war time jobs. The dehydrated coffee and fruit juice which is being shipped to our fighting men all over the world is packed in small individual containers made of plastic coated aluminum foil. So successful has this container proved that already a number of companies are considering its use for post-war products.

• George Washington Bridge at New York is one of many protected by aluminum paint



• Aluminum statues enhance beauty of the Department of Justice Bldg., Washington

Aluminum seals are used by the million on bottles and containers in the food, drug, and related industries. Aluminum collapsible tubes and semi-rigid containers carry a wide variety of items familiar to our daily lives.

A strategic wartime use for aluminum is seen in a new type gasoline drum developed by Alcoa engineers for use of the Air Transport Command. These new drums, which weigh less than one-half as much as the conventional type drum, are being turned out by the thousands, for transportation of gasoline by air, over the "Hump" on the China-Burma-India run, for the use of our airmen fighting the Japanese.

An interesting wartime use for aluminum is a new type of airplane landing mat, used by our army engineers for the rapid construction of airfields. The aluminum sections are more easily transported and handled, effecting a saving in valuable time.

The aluminum that goes into a modern bomber is a far cry from the aluminum used 50 years ago. In its pure form aluminum is comparatively soft. However, through proper alloying with small amounts of copper, magnesium, cilicon, manganese, zinc and other materials and through the applications of heat treatment and cold working it is possible to create aluminum alloys with extremely high strengths—as strong or stronger in many cases than structural steel.

A whole family of aluminum alloys have been developed each suited to the requirements of some particular fabricating process such as rolling, casting, forging, drawing or machining. One of the newest aluminum alloys (Alcoa 75S) has a tensile yield strength more than twice that of the strongest aluminum alloys used only a few years ago.

Two specific attributes of aluminum which have value in certain fields are its non-sparking and non-magnetic characteristics. Aluminum tools may be safely employed where sparks might ignite explosive gases. Truck bodies, such as those used for carrying petroleum products, are made spark-proof through the use of aluminum. The non-magnetic attributes of this metal make it useful for such applications as housing for electric busbar where it minimizes current losses. Housing for switch gear is often made of aluminum to eliminate magnetic problems.

The bright silver-white appearance of aluminum has contributed to its popularity in many fields. Examples are seen in many types of architectural trim, both exterior and interior. In giftware, hammered aluminum trays, ash stands and other related pieces are in wide use while the metal is employed for all manner of costume jewelry. Cloth has been made from aluminum thread—a sparkling touch to milady's wardrobe.

To the natural silvery hue of aluminum has been added color. Through chemical and electrochemical means it is now possible to give aluminum many textures and colors. Aluminum may be given additional beauty through burnishing, scratch brushing, and other means.

The Anodic treatment, developed before the war, is used to apply to aluminum and its allows an oxide coating which gives substantial resistance to abrasion as well as protection against the elements. Sometimes this anodic coating is combined with color. Recent investigations have shown that under certain conditions the metal may be given a thin plastic coating to give it additional resistance to chemical action. The high reflectivity of "Alzak" reflectors is made possible through the use of an electrolytic brightening treatment of the surface of the metal.

Frequently after equipment made of aluminum has served its original purpose, it still retains a high value as scrap. In fact, in considering the overall cost of aluminum for any specific purpose, the scrap value of the metal must always be considered. This applies to nearly everything made of aluminum, from beer barrels to trucks, buses and railroad trains.

• Union Pacific aluminum streamline train is one of many serving cities on West Coast

Only 5% Transferable In Utah Industries . . .

Utah's experience in endeavoring to reduce employment ceilings on a mathematical percentage basis shows how difficult it is in practice to transfer people from less essential to critical industries. At the same time, the very effort itself produced excellent overall results.

Last September the Manpower Priorities and Labor-Management committees for Utah, after considerable discussion as to how to meet the need for 10,000 male workers for "must" and highly essential activities, recommended that male employment ceilings be reduced in all establishments not directly contributing to the war effort.

Accordingly, ceilings were set by Joseph S. Mayer, state manpower director, the eight most important industrial counties, as follows:

1. *Activities whose employment ceilings remain unchanged:*

Nonferrous metal mining, milling and smelting
Repair services necessary in war effort and essential civilian economy.
Health, welfare and educational services
Ice manufacturing and packing.
Electric and gas companies
Transportation (except taxi service)
Iron mining and steel manufacturing
Retail coal distribution
Coal mining
Machine shops—on essential war work
Oil refining
Telephone and telegraph
Construction (essential)
Foundries and forges
Seasonal food canning
Logging and lumbering
Warehousing

2. *Activities required to reduce number of male workers 50 per cent below male employment of September 30, 1944.*

Candy, confectionery, ice cream, soft drink and nut stores
Drive-in eating establishments
Clubs, social, fraternal and political
Amusement and recreation establishments
Installation and service of vending machines and amusement devices
Dance, music, theatrical and art schools
Manufacture of alcoholic beverages
Drug stores (not including pharmacists)
Pool and billiard halls
Beer parlors
Retail filling stations
Night clubs
Card rooms
Furriers
Jewelry stores
Florists
Photographic studios
Amusement arcades
Music stores
Manufacture of soft drinks

3. *All establishments not mentioned above required to reduce number of male workers 20 per cent below male employment of September 30, 1944.*

All establishments having less than five male employees required to release male workers who could be replaced by women.

Some 3,500 firms were interviewed by WMC and U. S. Employment Service, but it was found that to have carried out the program exactly as planned would have virtually closed up less essential activity in Utah. Instead of the ambitious 50% and 20% reductions, A. L. Derbyshire, assistant area manpower director, reported that the actual number of workers for whom transfers could be arranged without dangerous effects on the community amounted to approximately 5% of the less essential male employment in the area.

Nevertheless, WMC arranged to transfer approximately one out of 20 male workers from less essential employers with five or more men. Also, male employment in less essential activities was reduced 20% below the February 1, 1944 level, which WMC believed to be the lowest point in less essential activity that ever had been reached.

An amazing number of aged and physically handicapped workers was found. As the most critical industry in Utah is mining, where only young, tough and hardy men can stand the gaff, the mines did not get much relief.

Here are some of the figures developed by WMC:

Of the 3,500 firms mentioned above, about six-sevenths of them were exempted on account of being one-man establishments. Of approximately 29,000 people employed, 15,000 were males and 14,000 females at the time of the Feb. 1, 1944 ceiling.

Male employment was reduced 23.5% and total employment 20.1%. Induction into the armed services of course accounted for part of this.

In the case of the exempted firms, in 26.1% of them male employment was limited to the proprietor himself, while 8.7% had male employees over 60 years old. Firms having less than five employees which otherwise would have to close up, 40.6%.

Male employees not physically capable of transfer to the essential industries, totalled 24.6%.

Of the returning veterans employed in January, 91% of them accepted essential war work; 4.5% had to take anything offered on account of their physical condition; 4.5% chose less essential industries.

In the Ogden area, 24% of the labor force consisted of women in 1940; in 1945 it was 45%; in the Salt Lake City area, the proportion rose from 25% in 1940 to 38% in 1945. The New England textile area is believed to be the only comparable portion of the country for percentage of women employed.

At the Geneva steel mill, about 500 women were employed; more could not be used.

In this campaign there was very effective cooperation from management, and the publicity given the program, plus the appearance of the USES field staff checking less essential industry caused an immediate drop in the demands of employers generally. It also was the best selling campaign for USES in Utah's history.

• Marine equipment built 1,000 miles inland. Freshly painted buoys at "Olson City," the plant of Olson Manufacturing Company at Boise, Idaho. Equipment not needed for war work has been pushed aside to await the completion of additional buildings.

• Thirty per cent increase in production schedules for Army and Marine Corps puts a "Combat Urgency" tag on every Black Widow P-61 night fighter job at Northrop plant.

Much Still Ahead on West's Aircraft Job

(Third of a series of articles dealing with war production situations in the West)

By BRIG. GEN. DONALD F. STACE
Commanding the Western District,
Air Technical Service Command

WITHOUT the wholehearted cooperation of industry, the AAF would not now be dominating enemy skies in all theaters, striking devastating blows at vital enemy targets and supporting ground forces and Navy task forces in their tactical operations. Without its continued cooperation, defeat of the Axis might easily be prolonged for years.

We are counting on every man and woman in industry to stick to the job until our job is finished. And that job won't be over until the military might of Japan as well as Germany has been crushed for all time to come. To do this, we cannot employ half-measures; we must pledge ourselves to all-out effort until final victory is won.

More than any war in history- this is a war of logistics. We must produce and move more equipment than was ever before thought possible. Moreover, in the Pacific, we have another enemy to overcome—that enemy is *distance*. We must ship equipment and maintain supply lines over thousands of miles of ocean. In Europe our bases are only a few miles from the heart of the Reich; but in the Pacific, even with the capture of Iwo Jima, we are still 750 miles from Tokyo.

The staggering quantity of equipment and supplies our fighting men must have on all fronts calls for all-out effort on the production line. Let's take a look at the production picture as the AAF sees it.

Revised quotas for aircraft production for 1945 call for some 84,000 units as against the 76,000 forecast in October, 1944. This is an increase of almost 11 per cent in the number of units, with a corresponding increase in airframe weight. Production of new, urgently needed types such as the Boeing B-29 Superfortress and the jet-propelled Lockheed P-80 Shooting Star, must be greatly accelerated. With such stepped-up aircraft schedules it is apparent there can be no relaxation of effort on the production front.

This is particularly true here on the West Coast, which last year was responsible for turning out one-half of the four-engine bombers, nearly one-fourth of the single and twin-engine fighters and almost one-fifth of the transports built in the United States. In July, 1944, a typical month, the dollar value of all AAF aircraft produced in the Western District of the Air Technical Service Command, comprising the states of California, Washington, Oregon, Nevada, Utah, Idaho, and Arizona, amounted to $217,000,000 or 30 per cent of the national total.

It is only natural to think of the big airframe plants like Douglas, Lockheed, Consolidated, North American, Northrop, and Boeing when we think of plane production. But those of us who are close to the production picture are perhaps more keenly aware of the importance of the thousands of subcontractors whose products go into Lightnings, Mustangs, Liberators, Fortresses, Invaders, Skytrains, and all the rest.

Without these subcontractors to supply the castings, forgings, hydraulics, electrical units, fuel cells, landing gear and the thousands of other items that go into a warplane, there wouldn't be much use for our assembly lines. Oftentimes, workers at these smaller plants, far removed from the actual planes themselves, are inclined to regard their work as less important to the war effort than those who are attaching the wings to fuselages, installing nacelles on engines and making the final inspection.

We in the Air Forces hold that the molder in the foundry is doing every bit as big a job in winning the war and is just as essential to production as the pilot who puts the plane through its paces for Army acceptance.

Indicative of the importance of the subcontractor in the production picture is the action taken by the AAF only recently in placing prime contracts well in advance and in urging prime contractors to place their orders with subcontractors without delay so the subcontactors would be able to gauge their machine and manpower requirements.

The West Coast can rightfully feel proud of the contribution it is making toward winning the war. Last year a total of 25,189 completed planes were produced in the District, with more than 5,500 equivalent units for spare parts. This total represents more planes by nearly 6000 than were produced in the whole country in the year 1941. In terms of weight of aircraft produced, including spares, the Western District turned out 399,142,200 pounds of the

approximately 1,110,751,800 pounds of aircraft and spares produced in the entire country.

Had it not been for the increased efficiency of workers, these production figures could never have been achieved. In January, 1942, the production efficiency of an average direct worker in the Western District was 4.00 man-hours per pound of aircraft produced. In December, 1944, or approximately three years later, the figure had been reduced to .90 man-hours per pound. This compares favorably with the national ratio of 1.05 man-hours per pound for the same month.

New High on Mustangs

Many production marks fell in reaching last year's record, but one of the most outstanding achievements occurred early this year. In January, North American Aviation, Inc., hit a new high for the entire country by completing more than 570 P-51 Mustangs at its Inglewood, California, plant. The previous monthly record for the industry had been 555 planes of one type from one plant. This is particularly significant since the Mustang is one of the "hottest" planes on our production program.

These records were accomplished in spite of the fact that engineering changes and modifications were constantly being incorporated in the aircraft to keep pace with the rapidly changing tactical and combat conditions. It is estimated that in the Western District alone more than 2200 Technical Orders requiring compliance changes were issued by the AAF during the year and a total of over 10,000 other engineering changes were processed and incorporated.

Experimental development in the aircraft field is as vital to victory as production itself. The planes that are winning victories for us today were conceived in 1942, 1941, 1940 and earlier. Six important aircraft manufacturers — Consolidated Vultee, Douglas, Boeing, Lockheed, North American and Northrop—conduct a major portion of their experimental development work at plants located within the Western District. This fact, combined with the pressure from the fighting fronts for new and improved types prompted development leading to first flights by 23 experimental airplanes during the year.

Quality Control Gets Results

The reputation the AAF enjoys for providing its airmen with the finest and safest as well as the most advanced fighting equipment is due largely to the closely controlled system of inspection which prevails. To provide an incentive for the improvement of contractor's inspection, the quality control rating plan was activated. Today 87 per cent of the plants in the Western District eligible for a quality control rating have received "approved" ratings.

To obtain an "approved" rating, the contractor must have in operation an inspection system which conforms closely to AAF requirements designed to insure delivery of an acceptable end product with a minimum of spoilage or rework in manufacturing. This involves the establishment of rigid inspection controls on the subcontractor's part, covering each operation from and including receipt of raw material to shipment of the completed article.

One West Coast manufacturer reduced the amount of rework and scrap in his plant over 300 per cent in a period of seven months during which concentrated effort was put forth by labor and management in obtaining an "approved" rating.

Quality control, incidentally, is an important factor in determining a plant's eligibility for the coveted Army-Navy "E" Award for excellence in production, the highest production honor the nation can bestow. Since the first "E" Award was granted in July, 1942, to Boeing, Seattle, 63 plants in the Western District have received "E" Awards, a ratio that is in line with the national average of 3 per cent for all war plants.

Awards to Big and Little

Several now carry four stars on their flags—stars which indicate that their production standards have been maintained for periods of six months each. The four-star winners are Boeing Aircraft Company, North American Aviation, Lockheed Factory "A", Consolidated-Vultee, Vultee Field Division, Solar Aircraft and Aerco Corporation.

Size of a plant is no barrier. The 40 employees of the Farr Company at 2615 Southwest Drive, Los Angeles, wear their "E" emblems just as proudly as the thousands of men and women at Douglas or Lockheed.

High quantity as well as high quality of production in the light of available facilities is a prime factor in selecting awardees. The Award Board also considers: full utilization of available equipment; avoidance of work stoppages; maintenance of fair labor practices; cooperation with the war program; effective management and engineering; record on accidents, health, sanitation and plant protection; utilization of subcontracting facilities; and record of absenteeism. I enumerate these points because I believe all manufacturers will do well to aim at the high standards required of an "E" Award nominee.

Absenteeism is one of the evils we must fight—and fight continuously. Chronic absentees must be eliminated if they can't be cured. True, the aircraft industry on the West Coast has shown encouraging improvement in recent months, but even so, in January, 5.4 out of every 100 workers were absent daily. This compares with 6.1 in December when the national average for aircraft workers was 5.9.

Another way industry can help to speed war production is to make sure that key personnel in war plants are familiar with termination procedures, including the filing of claims, segregation of property and preparation of acceptable inventories.

It must be realized that in order to satisfy our rapidly changing military requirements there must be correspondingly rapid and often drastic changes in production schedules. Consequently, the Government finds it necessary to cut back or terminate some contracts and replace them with new contracts. It is essential, therefore, that a manufacturer be prepared at all times to handle a termination or a cutback of his war contracts quickly and efficiently. Most important, he must clear his plant so he can be in a position to take on new and more essential war production without delay. In this way, the war program can

• Air Service Technical Command chiefs at Los Angeles on a recent tour of western aircraft plants. Left to right: Lieut. General William S. Knudsen, ATSC director; Merrill C. Meigs, special civilian consultant; Major General Bennett E. Meyers, deputy director; Brigadier General Donald F. Stace, Commanding General of the Western District.

be carried out with minimum interruption to production and dislocation of manpower.

For some months now the Army Air Forces has conducted a nationwide readjustment training program for contractor and government personnel. The Western District of the Air Technical Service Command has been particularly active in carrying out this program.

Since the first readjustment training conference was held in Los Angeles, June 10-13 of last year, more than 4,000 contractor personnel have attended meetings on contract readjustment procedures in the seven states comprising the Western District. A staff of readjustment specialists has conducted courses in San Diego, San Francisco, Seattle, Portland, Spokane, Tacoma, Salt Lake City, Phoenix, Oakland, Sacramento, Fresno, San Jose, Pasadena, San Bernardino and Long Beach. In the Los Angeles area, where there is probably the greatest concentration of aircraft contractors and subcontractors of any section of the country, a dozen or more meetings have been held.

These meetings have been held in cooperation with the Navy, the Smaller War Plants Corporation and the Chambers of Commerce of the various cities visited. In addition to war contractors, audiences have included bankers, lawyers, accountants and others vitally interested in readjustment matters.

Sub-Contractors Should Speak Up

One difficulty, however, has been to reach the third, fourth and lower tier subcontractors whose identity in most cases is known only to the subcontractors immediately above. Since it is our goal to reach every manufacturer in the Western District, from the one-man machine shop to the largest airframe plant, in accordance with the specific request of the Contract Settlement Director, Robert M. Hinckley, all war contractors are requested to urge their subcontractors and suppliers to attend the meetings which will be continued until all have had an opportunity to be indoctrinated.

Pretermination of claims is playing an important part in the readjustment training program. From actual experience it has been demonstrated that the time necessary to settle a terminated contract can be reduced anywhere from 10 to 30 days through settling debatable items such as disposition of tools, work-in-process and property, in advance of actual termination. This is not only important from the standpoint of war production but will be immeasurably helpful in shortening the reconversion period when both Germany and Japan are defeated and peacetime production can be resumed.

However, our primary job is production. Everything else is subordinate to it. Nothing—and this includes post-war planning—must slow down the war effort.

The job's not finished, and what's ahead will not be easy. The production program on new and existing models must be accelerated in spite of shortages of manpower and materials. To accomplish this task will require the all-out effort of every man and woman connected with industry. Everyone must do more than he or she has done in the past. We must not, we can not, let down our men on the fighting fronts by failing to furnish them with the necessary equipment, on time and in the quantity needed.

Postwar Prospectus For San Diego

Postwar employment in San Diego will exceed 1939 levels by almost 50 per cent, on the basis of plans projected by the aircraft, boat building, food processing and other industries, according to the estimates in an industrial survey completed for the city by Day & Zimmerman of Chicago.

Interviews with 200 local manufacturers showed that 37 expect to make entirely new postwar products, such as automobile passenger buses, cooking utensils for household and institutional use, a newly developed type of lawn mower, and the manufacture of paperboard from waste paper.

Growth of the southern California and Arizona market during the last four years makes inevitable the fact that San Diego will sustain additional factories, branch plants and an expansion of present industry according to the survey. Buying income of San Diego's primary market—the three contiguous counties and southern Arizona—almost tripled between 1940 and 1943, $572,702,000 to $1,548,721,000 annually.

The survey proposes formation by local citizens of a corporation to rehabilitate vacated, government-owned aircraft plants after the war in event the present occupants cannot use them and they are not desired by national manufacturers of automobiles, farm implements, refrigerators, or household appliances.

Precedent for such a step was established by the residents of Manchester, N. H., who formed a corporation capitalized at more than $500,000 when the Amoskeag mills shut down in 1936. This corporation helped finance several industries, and sold or leased floor space equivalent to Consolidated Vultee Aircraft Corp.'s Plant 2 in San Diego.

Open-Top Packaging Of Fruit Cartons

David Vienna and A. W. Vienna plan to initiate "tomato boat" packaging in Los Angeles with a new machine which they hope to have running by June. It will wrap the fresh tomatoes in one-pound, open-top cartons, or "boats," with a top covering of revelation cellophane paper at the rate of 100 boxes a minute. Four-pound containers will go through the machine at about 48 boxes a minute.

Editor's FIELD BOOK NOTES

NOSING around among the coal operators of Utah to find out what they were doing to meet the competition of diesel locomotives, we finally found one A. V. McLeod, manager of coal mining properties for Henry Kaiser. "What are we doing about diesel competition?" he said. "I'll tell you what we're doing. We are using a diesel locomotive to pull coal out of our mine." (Editor's note: the famous speech by the late Senator Ashurst of Arizona entitled "The inconsistency of being consistent" ought to be kept sacred at Washington along with the Declaration of Independence and the Constitution.)

Speaking of diesels, they make trains travel, but they also make 'em shake. With apologies to the New York Central, we predict that some day some railroad will advertise itself as the "Don't joggle route—you can write."

Burt Brewster, publisher of the Mining & Contracting Review of Salt Lake City, is griping because he ordered "tenderloin steak, au gratin, $1.75" at one of New York's best known hotels and got hamburger. It's his own fault. He ought to know that "au gratin" is the code word for "cheeseburger."

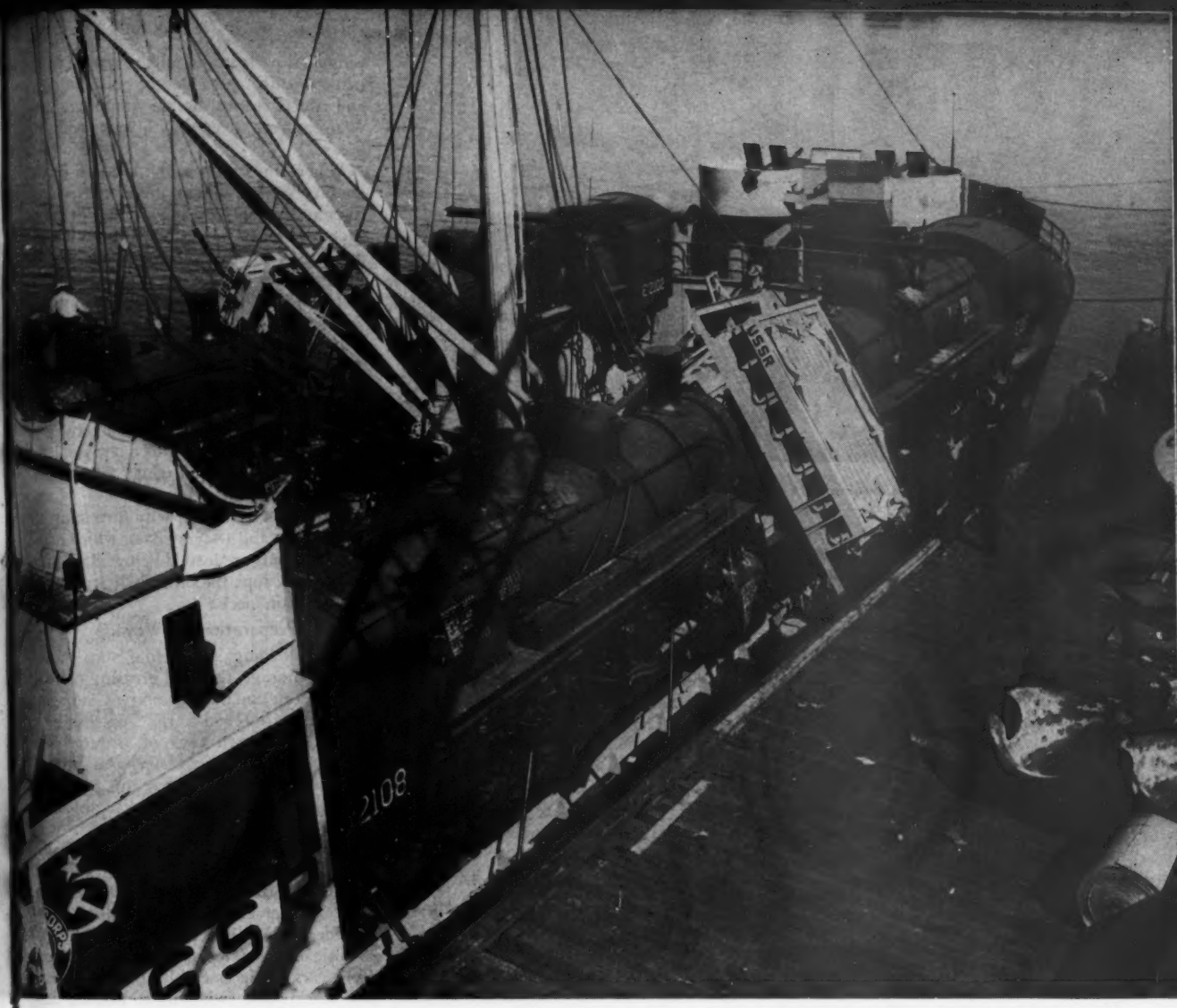
And Henry E. Poulterer, traffic vice-president of the Western Pacific, has a gripe against one of Chicago's allegedly best hotels. Confidently clutching the telegram of confirmation of his reservation he marched up to the desk, only to have the clerk say "That telegram doesn't mean anything. We send out flocks of those things." But they have sent their last to one Henry E. Poulterer.

Is passenger traffic easing up a bit? Taxi driver in Denver said it only took five taxis to handle the arrivals from the City of Denver now, where it used to take 14 several months ago.

Electric Device Simplifies Riveting

An electronic device invented by Walter Mandel, an employee of Consolidated Vultee Aircraft Corp., the device at San Diego, eliminates the need for a large number of aircraft workers by making it possible for a machine to do most of the work involved in riveting certain types of airplane subassemblies. The only human assistant required by the machine is a man or woman, whose sole function is to turn a simple switch on or off.

Mandel's invention looks like a small radio set. It is technically known as a "pneumatic sequence control unit," and it acts as a sort of "brain" for an automatic riveter.



• A forward deck load of four locomotives ready for lend-lease shipment to Russia after being assembled at Portland

LOCOMOTIVES—Assembling at Portland

WILLAMETTE Iron & Steel Corporation at Portland are assembling locomotives built in the East for shipment to Russia, a task which may be the forerunner of numerous postwar assembly operations all along the Pacific Coast.

The assembly plant is located immediately north of Willamette's Oceanic terminal. The installations are owned by Defense Plant Corporation and are operated by Willamette under supervision of the U. S. Army Transportation Corps.

A 100-locomotive capacity storage yard of 13 tracks was provided alongside Northern Pacific tracks, with connections to permit the railroad company to deliver knocked-down locomotives on standard-gauge cars.

A dock also was constructed with dolphins along the harbor line against which ships anchor for receipt of locomotives lifted by a 100-ton stiffleg derrick from railroad to receiving track aboard ship.

The assembly building was planned to unload and assemble three locomotives without tenders each 24-hour period. Later, however, this requirement was expanded to include the tenders. The cargo ships arriving for loading are equipped to take either six locomotives and their tenders on the main deck over cargo previously loaded between decks, or eight locomotives and ten tenders between decks, with an additional ten locomotives and eight tenders on the main deck.

Each locomotive arrives from point of shipment on three cars, with the tender occupying one of these. They are delivered on cars over track No. 2 of the receiving and storage yard.

These cars are then pulled on to the transfer table by an electrically operated hoist, mounted on the table and controlled by the table operator. When the loaded car is on the transfer table, the table is moved by a geared electrically powered unit from track No. 2 to alignment with the center track of seven tracks occupying the assembly building.

This center assembly receiving track has two separate gauges, one U. S. railroad standard gauge, (56½ inches), and one with the 60-inch gauge used on the Russian railways. The other six assembly building tracks (three on either side of the two-gauge center track) are laid for 60-inch

• One step of lowering an engine into the hold of a Russian ship following assembly

gauge to receive the locomotives and tenders to be assembled.

The center track receives U.S. standard gauge cars and is equipped to receive 60-inch gauge locomotives if storage exceeds capacity of the other six tracks. The transfer table is equipped with standard and 60-inch gauge tracks, all storage tracks, while the storage tracks are all 60-inch gauge and the one from the storage yard to the loading dock has both gauges.

When the transfer table tracks are aligned with the center track of the assembly building, the electrically powered hoist on the table operates in conjunction with wire rope blocks at a pulling point in the rear end of the assembly building. This pulls the standard gauge car into the building where an overhead, 70-ton 83-foot bridge crane, which operates over all seven building tracks, picks up the running gears and frame of the 60-inch gauge locomotive. These are then lowered onto such vacant track as is prepared to receive it.

Assembly Operations

The empty standard gauge car is pulled back onto the transfer table and moved to track No. 1, where it is pulled off by reversing the process of pulling into the building. This empty car is cleaned of dunnage and then pulled out of the yard by the railroad company.

Next operation pulls the standard gauge car, containing the boiler, from track No. 2 onto the transfer table. Moved by the same means used on the running gear car, it is unloaded in the building by the bridge crane, which places the boiler on the previously unloaded running gear.

Now the assembly crews begin fastening the boiler to the running gear by hooking up pipes, sand and steam, and bolting boiler and running gear together. The steam pipes to steam chests have to be welded, the general condition of the boiler and running gear parts surveyed, and additions and repairs made. When ready for removal from building to storage yard, the fire box, steam chests and cab have to be housed in to protect vital parts from damage by buffeting seas.

From the tender, switched and unloaded in the same manner as the running gear and boiler, are removed many parts used in fastening the boiler to running gear and in equipping them for speedy operation when delivered to destination. These parts are received, together with many spares, boxed in the coal compartment of the tender, and have to be re-boxed and secured by strong planking for shipment with the locomotive.

When the locomotives and tenders are ready to leave the assembly building for the storage yard, they are pulled onto the transfer table by wire rope running from the table hoist to the locomotive or tender.

Moved to Storage Yard

When pulled on the table, it is moved to alignment with the storage yard tracks and pulled off by the hoist cable operating through wire rope blocks anchored to "dead men" 100 feet away from the table.

Then the 60-inch gauge switching engine moves onto the table and is carried to the track where the locomotive has just been placed, and pushes this locomotive to its position in the storage yard.

Here the locomotives and tenders are prepared for overseas shipment by wrapping vital parts in specially prepared paper made to withstand action of pounding seas and violent storms. Before wrapping, these vital parts are covered with water resisting grease.

When ships dock at the location of the loading derrick, these prepared locomotives and tenders are taken from the storage yard by a 60-inch gauge locomotive and delivered near the transfer point of dock to ship. They are spotted in groups of two and four near the end of the track, where the securing crews attach the necessary fastening materials on each unit that is used to secure it on board ship.

Some ships take four locomotives and four tenders on the main deck and some take six of each. These ships, like those prepared for full loading of locomotives, have prefabricated tracks on which the locomotives rest en route.

Five ships have a capacity for taking 18 locomotives and 18 tenders, of which number about half are loaded below main deck on the tank top; the other half are loaded on the main deck.

Preparation for Voyage

After loading and before ship moves from anchorage, the final greasing of vital parts is done and the locomotives and tenders securely fastened to the ship, using an average of eleven tons of material per locomotive. The Soviet vessels pass through all kinds of weather at sea, and particular efforts are made to meet all forseeable conditions.

Lieut. Col. Leslie M. Rudy of the Transportation Corps supervised and directed the project for the Army, in cooperation with Austin Flegel, Jr., executive vice-president of Willamette.

Unloading of locomotives and tenders from cars, their assembly, boxing, greasing, storing and switching to loading derrick is under the direction of Martin Kullowatz, machine shop superintendent for Willamette Iron & Steel, assisted by Claude Morris, master mechanic. Architectural design for assembly building, trestle and loading dock was made by Earl Bryan of the Wisco plant department.

• Locomotive chassis being lifted from a flat car in the Willamette assembly plant

Western Steel Situation as Viewed from Washington . .

By ARNOLD KRUCKMAN

National Capital Slants on Future Developments in the Picture

1. Reconstruction Finance Corporation and Defense Plant Corporation carrying on surveys of both Geneva and Fontana, but not clear what these are finally intended to accomplish.
2. New study of "levels of traffic," particularly devoted to the West Slope, that may be used as yardstick in making up of new freight rate structure by the Interstate Commerce Commission.
3. Regional interests will get the priority in procuring the Geneva plant and its assets.
4. In due time funds from some government agency will take up the slack in any deficit from regional financing of a purchase.
5. The White House will run the Reconstruction Finance Corporation from now on . . . with all that implies in the steel situation.

WASHINGTON, D. C.—For the time being we are rather apathetic here in the Capital about the steel problems of the Pacific Slope. Our general impression is that there is little we can do until the war is settled.

We are vaguely aware that a number of surveys are under way out there, among them one paid for by the State of California, and another at the expense of the eastern-dominated steel industry. We also know there are two or three surveys going on that have been ordered by the RFC or the Defense Plant Corporation.

But it is not quite clear what all these surveys are finally intended to accomplish. We have a strong suspicion that most of the activity both here and out there and elsewhere is a diversion, something like those feints that cover some other action by an attacking army. We think your committee of 15 sounds like something that may be worth while, but we are deferring judgment until we see what it means, how serious it is intended to be.

It may not be pleasant to learn, but the fact unhappily remains, that many things emanating from the Far West are accepted here as something that must be taken with a grain of salt.

The new manager of the Los Angeles Chamber of Commerce office in Washington, John M. Costello, the former Congressman from Los Angeles, went out to attend the steel confabulation at Salt Lake City but did not bring back any impulse that has caused anything to happen here. We are told that the result of this Salt Lake City meeting also is to be made patent in another series of surveys and studies.

This cautious trend in the erstwhile daring West of striking pioneer history is rather puzzling to those of us who are not happy about the delays. It seems to be of a part with the report that has been brought back it is estimated it will cost, say, $50,000,000 to buy the Geneva Steel system from RFC, and that it will cost another $30,000,000 to set it going to production.

The estimate seems quite reasonable, but the word that is rather paralyzing is the reiterated assertion that, of course, you can't raise $100,000,000, to make the Geneva plant tick, out there on the West Slope of the Rockies. It rather sounds as if you people out there might like somebody here to pass the hat around to get the money for you.

As a matter of fact men with the drive and colorfulness of Congressman Harry Sheppard, of Yucaipa, California, who is chairman of the military subcommittee of the House Appropriations Committee, feel it will not be any real task for Westerners to raise at home a half billion dollars to acquire and operate both Geneva and Fontana plants, and any other byplants that may be necessary to make the enterprise of producing and selling steel on the West Slope successful. Sheppard properly feels that all going steel industries on the West Slope should be preserved and operated by Westerners, always assuming that the product can be marketed.

It is reasonable to anticipate that when the time comes, Harry Sheppard will be a very active and important factor in setting up your steel industries at Fontana and at Geneva for the benefit of the West.

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

Obviously the heart of the problem, after the supply of raw ores and limestone, is the freight rate structure. Mr. Sheppard has made the statement that recent announcements reveal that the contiguity to the ports in Southern California gives Fontana the lowest freight rate for steel in the United States.

Mr. Sheppard did not say it, but we also are told that the Kaiser plant does not have access to a bountiful supply of raw ores, and that it has occasionally tried to find a supply down in Mexico as well as elsewhere. The word is that during the period of war pressure it has been compelled to depend largely on scrap, and that there were times when it had only a margin of three days between its inventory and possible interruption of production. This should not, however, worry the histrionic Mr. Kaiser with his predilection for yellow sleeping cars and his tendency to grandeur.

Washington, much as the West itself, thinks both Fontana and Geneva should be placed on an operating basis for peace or postwar production. And the experts have apparently feel that Fontana and Geneva supplement each other, and may be able to solve the raw ore problems without going over the border. After all, the gradient slopes steeply from the plateau of the intermountain country to the Coast location of Fontana, and this incline is estimated to spell low transport costs of shipping ores.

Geneva also has some problems, according to Washington sources. It does not own its ore supply sources. These, apparently, must be procured separately and independently aside from the plant itself.

Another interesting potential is ahead about which we know little except that it is expected to be revealed within the next three months. It is a study of the *levels of traffic,* particularly devoted to the West Slope, meaning every State on the Western side of the Rockies. The study has been in progress for months, and it follows the general pattern of the study of the National Levels of Traffic which was issued

by the Interstate Commerce Commission.

The author, Dr. Julian Duncan, has painstakingly surveyed every factor that will make a level of traffic for steel on the West Slope. He has given much thought and study to Geneva and to Fontana, and undoubtedly now has more intimate and detailed information about prospects after the war, so far as they can be estimated, than any other person or agency. Dr. Duncan underlines that his report will not be a forecast, but will be an estimate.

It is known that the Interstate Commerce Commission has contemplated drastic reformation of the freight rate structure as it applies to most commodities and all modes of transportation. Without formal word from any source, it is reasonable to assume that Dr. Duncan's forthcoming study, or estimate, will have a definite effect upon the making of any new rate structure which may be established by the Interstate Commerce Commission. Probably it is safe to predict that the report will not be quite as optimistic as are some of the current statistical studies which, as quoted earlier, place Fontana in the most advantageous rate position for distribution of steel, and Geneva next. The Duncan report will be very important to the West, in relation to steel, as well as in relation to agriculture, livestock, mining, and forest products, the five chief major divisions which are affected by the rate structure in traffic.

It is not unlikely that the report will form a basis of discussion and debate out of which will flow reforms, changes, and modifications, which should profoundly impress themselves upon the postwar socio-economy of the West. Dr. Duncan has done an excellent job of exploring. There is scarcely a Westerner in Washington he has failed to interview.

His work has been exceptionally unusual because he has studied the purely human aspects of the problem as well as the statistics, the technology, the economics, the sociology, the fiscal structure, the international implications, and the history of the West as well as the connotations of the history in connection with the subjects he has made his special study. It is intensely interesting to learn that the study of the West has so stirred Dr. Duncan he is almost convinced he would like to migrate out there himself. For the next six weeks, or more, he will be down in Brazil, on an official tour, and he will revisit much of the area in which he has already spent some time.

Here in Washington we feel that before you devote much time to the steel problems you have others more immediate that require extraordinary attention. And don't kid yourself that what you do is not being watched from afar. It is the feeling here, even over in RFC which has just acquired a new helmsman, that your steel problem is rather certain to eventuate in the result that in due time you will get from RFC, or some other Government agency, the funds you may require to temporarily take up the slack there may be in your regional financing.

• SOME TERRITORY! Just a trifle of 3500 miles that Arthur A. Hodges, WMC Director for Terr. of Alaska, has to look after.

What you seem to forget, out there, is the fact that the Geneva plant and any other plant, controlled by RFC, or its subsidiaries, must be sold by the Government on terms that will give the local interests, meaning the regional as well as the more closely local interests, the priority in procuring the plant and its assets.

You can depend upon it, men such as Congressman Robinson and Congressman Sheppard will watch the activities connected with these steel plants with a very alert attention, and that they will not permit the steel crowd in the East, or any other crowd, put over any quiet deal that will allow the plants to go into alien hands.

They are only too well aware that there are some interests which would readily proceed to acquire the Geneva plant and others for the sole purpose of freezing the resources until they feel they could be operated without competing with existing systems. The Congressmen also have their eyes on the raw ores deposits to see that they are not grabbed by those who might use the control to hamstring the operation of the plants.

Both Robinson and Sheppard have the confidence and respect of the White House, which means that when the time comes they will be able to enlist the cooperation of the most powerful factors in setting the Western steel machinery in motion. Fred Vinson, the new head of RFC, is FDR'S man. He will do exactly what the President demands. This means, obviously, the White House will hereafter run the RFC in every sense the word implies. This may not be happy news for many people, but it is good news for you people who wish to make certain your rights in the Western steel plants are protected and safeguarded.

Treasury Surplus Property Sales

The Treasury's Office of Surplus Property reported that for December, 1944, its sales of consumers goods in the San Francisco office, serving Arizona, California and Nevada, amounted to $1,290,724, in the Seattle office, serving Idaho, Oregon, Montana and Washington $689,191, and in the Denver office, serving Colorado, New Mexico, Utah and Wyoming, $446,036.

Transactions involving more than $10,000 for these offices included the following:

Truck—Command (used), $17,400, Burt Chevrolet Inc., Englewood, Colo., $14,800, Sam Goodman, Los Angeles, Calif.

Motorcycles (used), $10,838, B. S. Miller Machine Co., Los Angeles, Calif.; $13,240, Harry W. Scott, Salem, Oregon; $15,030, B. B. Miller Machine Co., Los Angeles, Calif.; $12,750, Guy Urquhart, San Diego, Calif.; $12,616, ton; $12,230, CCalifornia Tractor & Equipment Harley Davidson Sales Co., Seattle, Wash.

Scrapers (used), $12,230, California Tractor & Equipment Corp., Oakland, California.

Concrete batching plant (used), $16,500, Coast Equipment Co., Phoenix, Arizona.

Shotguns, $22,420, Union Hardware & Metal Co., Los Angeles, Calif.

Trucks, Army (used), $12,561, Stewart Chevrolet Co., San Francisco, Calif.; $15,108, Zike Guy, Los Angeles, Calif.

Containers and crates, seven and a half gallons, $14,642, Dulien Steel Products Inc., San Francisco, Calif.

Trucks, Army (used), $20,348, Murphy Oldsmobile Co., Los Angeles, Calif; $25,544, Kelly Kar Company, Los Angeles, Calif.

Containers, fuel and boxes, $15,200, Standard Brands Paint Co., Los Angeles, Calif.

Scrapers (used), $11,500, Consumers Rock & Cement, San Francisco, Calif.

Tractors, crawler (used), $10,332, M. P. McCaffrey, Inc., Los Angeles, Calif.

Motorcycles (used), $98,459, Harley Davidson Sales Co., Seattle, Washington; $30,936, Indian Northwest Sales Co., Portland, Oregon; $23,085, Western Motorcycle Co., Portland, Oregon.

Trucks (used), $22,950, Carl Weissman & Co., Great Falls, Montana.

San Francisco Bay Area Leads in Building

Volume of building construction in San Francisco, Oakland, and Alameda in 1944 exceeded that of any of the other leading areas in the United States and accounted for 22 per cent of the total of the ten leading cities. The total in the three cities for 11 months was $62,594,000, compared to $48,690,000 for the same period in 1943.

Federal building construction in the three Bay Area cities amounted to $46,912,000 or 45.4 per cent of the total for the ten cities, and was 43 per cent above the previous year compared to a decline of 37 per cent for the ten cities as a whole.

How Much *Air* To Make These Rocks "Fertile"?

EVEN THE *SOIL* is going through a war-time speed up—to produce more and better food for a war-torn world. Already, parts of Europe's overworked earth are growing crops faster, and with extra nutrients—thanks to wonder-working fertilizers. Outstanding among these soil-enrichers is superphosphate, extracted from Florida phosphate rock—with a helping hand from "Air at Work" all along the line. Lets see how it's done:—

Ground phosphate rock is transported cleanly, economically to the first process by the air route—a pneumatic conveyor. Meanwhile, acid to be mixed with the phosphate must first be diluted. That means intense heat—so giant Sturtevant Fans blow into the acid—cooling it and speeding production. Next, in a settling den, a Sturtevant Fan—specially protected to withstand the toxic gases—whisks them out of the plant air, sends them to a reclaiming tower. Again, in the final pulverizing operations, Sturtevant Dust Collectors clear the air of escaping particles, salvage them for shipment. All told, it takes over *6 tons of air* for every ton of superphosphate produced.

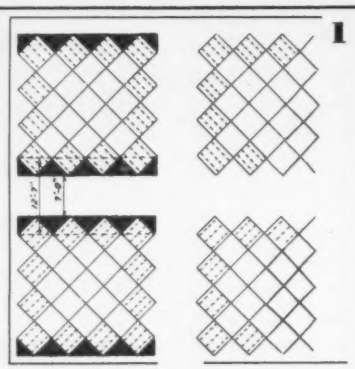
Sturtevant Silentvane Fan used in processing phosphate rock into fertilizer—a process developed by The Dorr Company of New York.

Sturtevant
Puts Air to Work

SPEEDING AND IMPROVING *your own* production—even cutting costs—is the challenge of *engineered air* that you can't afford to overlook. Why not evaluate this powerful processing tool with the help of a Sturtevant Engineer. He is ready now to show your post-war planning committee how to ventilate, heat, air condition, convey, control dust and fumes, or burn fuel *more economically.*

B. F. STURTEVANT CO. OF CALIFORNIA, LIMITED
Plant at Berkeley, California
SAN FRANCISCO, LOS ANGELES, SEATTLE, PORTLAND, SPOKANE

Advantages of Stowage on Diagonal



The average 4000 lb. fork truck can stow 4' x 4' pallets diagonally from a 7' aisle. However, if the shaded waste spaces are added to the 7' aisle, the result is equivalent to a 12' 7" aisle; only 12' is required for square stowage.

DIAGONAL stowage is a valuable special purpose tool that will do an effective job when properly used, according to The Palletizer, the monthly publication of the Naval Ordnance Materials Handling Laboratory. It summarizes the advantages as follows:

"Because diagonal stowage makes possible narrower aisles than does square stowage, there is a popular opinion that the former is more economical of storage space. This is not necessarily true with square pallets because just about enough space is wasted around the walls of the warehouse to make up for the narrowness of the aisles. (See diagram 1.)

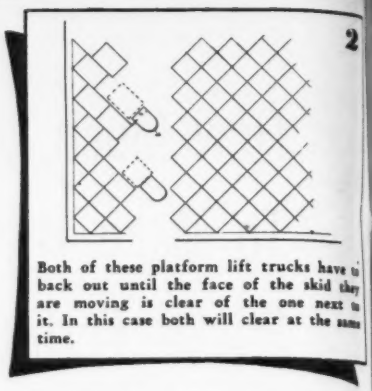
"However, with rectangular skids whose openings are on the narrow sides, warehouse capacity can be increased by diagonal stowage. A 4 ft. x 6 ft. skid stowed squarely would require a wider aisle than a 4-ft. x 4-ft. skid. Stowed at an angle of 45 degrees, the rectangular skid would require no more aisle space than the smaller one, since the platform truck must back out the same distance to clear surrounding stows in either case. (See diagram 2.)

"Many warehouses contain posts or columns, so spaced that square stowage of pallets results in large gaps between the rows. Under such conditions, diagonal stowage has often brought about appreciable increases in warehouse capacities, because it happened to fit in well between the columns. Generally a 45-degree angle is used, though other angles have also proved useful.

"Another valuable use for 45-degree stowage is in the aisle of a full warehouse. Pallets could be stowed squarely at the end of the aisle, stringers parallel to it, but if many loads are so placed, accessibility to the regular rows at the end of the aisle will be considerably impeded. However, a single row of pallets can be placed diagonally along one side of the aisle, providing their corners are 2 feet apart to permit them to be swung into place. The advantage of this method is that any one of the regular rows leading from the aisle can be reached by the removal of only one of the diagonal stacks.

"Diagonal stowage is sometimes installed because it is easier and quicker for a fork truck to make only a partial turn than to make a full 90-degree turn. Actual operations, however, have failed to show any appreciable savings in man-hours.

(Continued on Page 52)

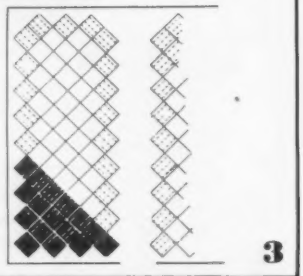


Both of these platform lift trucks have to back out until the face of the skid they are moving is clear of the one next to it. In this case both will clear at the same time.

(Continued from Page 50)

"Against the potential advantages, there are certain difficulties with diagonal stowage. It is harder to plan and to inventory

If cross aisles are not provided, there will be triangular areas in the warehouse which are inaccessible by fork truck until a lot of material is moved. Note the direction of the pallet stringers.



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(especially with rectangular pallets) than plain square stowage. Also, in the majority of cases it results in loss of accessibility.

"Unless cross aisles are provided, there will be triangular areas which cannot be reached without removing a great deal of other material. (See diagram 3.) If only a few different things are being stored, this is, of course, no problem. Generally speaking, diagonal stowage should only be used when one of the particular advantages described above is to be gained."

Mathesius Reassures Friends of CF&I

Further reassurance to people in Colorado that the Geneva steel mill, operated by a responsible management in the interest of the public and common good, will not be a threat to the future of Colorado Fuel & Iron Corporation was given by Walther Mathesius, president of the Geneva Steel Company, to the Pueblo and Denver chapters of the American Society for Metals, at meetings held the same week as the Western States Council steel conference at Salt Lake City.

Mr. Mathesius had expressed himself in the same vein at Salt Lake City. In Colorado he said that possible changes in control of the two plants made it necessary to be cautious about postwar commitments. Nevertheless, in his opinion the Geneva mill should not attempt to convert its present facilities so as to enter into direct competition with CF&I, which would be disastrous to one or both of them.

In answer to questions propounded at Pueblo, he said he believed it would be unwise for Geneva to produce rails and rail fastenings after the war, because of the established relationship between CF&I and the railroads and because there is already ample production of these items in the country generally. This would make it financially unattractive for Geneva.

As for wire and wire products, he said CF&I, others in the West also, have ample capacity to supply all reasonable postwar demands in the West.

Plans at Geneva for conversion to postwar production, according to Mr. Mathesius, are based on light-gage, flat rolled products, while structural shapes which CF&I produces but has never sold on the Pacific Coast, could logically be produced for the coast area by Geneva. Incidentally, he said that Geneva does not expect to make substantial purchases of market scrap.

"We hope that our efforts will have developed, said Mr. Mathesius, "and will continue to develop, with the cooperation of other enterprises, a permanent contribution to the industrial growth and economic strength of this area.

"I have urged repeatedly, and I should like to do so again now, that while we at Geneva are producing plates, shapes, shell steel and other war needs, it should become the accepted and jointly undertaken task of the leaders and planners, the economists and business men throughout these Western States, to chart the course toward the steel markets which in the years of peace to come may be supplied by a growing western steel production operating profitably on the basis of sound economic principles, with fair participation by all producing plants, which can in this manner contribute to the common good."

—while subgrader is in operation

Meet a manhole, culvert, or other obstruction in the subgrade with a STANDARD-LEWIS Subgrader and all you do is throw a single hand-lever forward (while subgrader is in operation) and up it goes quickly to clear the obstruction. A simple, balanced cable hoist does the trick in a matter of seconds! This and many other exclusive features (some patented) makes the STANDARD-LEWIS Subgrader a "must" for the tremendous road building programs that are shaping up.

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Distributors Throughout United States and Canada

Standard Steel Corporation has been in business in Los Angeles more than 20 years manufacturing an excellent line of time tested paving equipment.

For the past two years, we have been directing the advertising activities of this company to interested audiences both in the United States and Canada, with a resultant noticeable increase of Standard Steel equipment on American and Canadian government projects for war.

This 2-color, page advertisement, now appearing in leading trade journals in the two countries, was developed to acquaint the trade with the many exclusive, patented features of Standard Steel production which will be available to them after the termination of hostilities.

Vividly it illustrates how a unique device in art treatment, clever use of color, unusual manipulation of type and informative news-copy can create and hold reader interest.

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Someday advertising, too, will come marching home to put on civilian clothes again. When it does, what will happen to your business? To whom will you sell your products or services? The McCarty Company is not an organization of psychics. But we have had 25 years' experience solving these and similar problems for the west's greatest and most progressive industries. Maybe we can help you to contact future business.

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A Complete Industrial Advertising Service Since 1919

LOS ANGELES 15, BENDIX BUILDING • SAN FRANCISCO 5, RIALTO BUILDING
PITTSBURGH 19, KOPPERS BUILDING • FORT WORTH 2, DAN WAGGONER BUILDING
MEMBER...AMERICAN ASSOCIATION OF ADVERTISING AGENCIES

REGIONAL REVIEWS
COLUMBIA EMPIRE

IF there was ever a city in the throes of indecision, uncertainty, transition or whatever else you wish to call it, Portland is it. Now that the end of shipbuilding appears to be definitely in sight everyone is trying to name the date, guess at possible employment rolls and everything that goes with it. Contradictions fly all over the place. Here are just a few:

The Kaiser yards and War Manpower Commission have both stated that shipyard employment is now levelling off and will start dropping off rapidly in July. Kaiser yards will probably be down to about 40,000 at the end of the year, compared to the 90,000 they had at the beginning of the year.

Despite this the Maritime Commission has approved a $1,100,000 appropriation for installation of industrial feeding facilities in the three Portland-Vancouver Kaiser yards. The Kaiser Company itself has opposed the in-plant feeding idea but now it looks as though it will be forced upon them.

Portlanders are confused by stories, such as the Fortune study, which predicts this to be one of the greatest problem areas in the country because of a surplus of labor after the war and by such stories as the Oregonian carried from Washington, D. C. on February 20 which, emanating from the Department of Interior, pointed to the Northwest as a "Haven for returning veterans after the war." How this can be a land of great unemployment and great opportunity at the same time is rather difficult to understand, although perhaps it can be explained in long-run versus short-run terms.

There is plenty of talk about labor shortages even while layoffs are occurring on a wholesale basis. The United States Employment Service reported recently that up until February 26 approximately 800 women had been let out of the shipyards. There are a lot of other jobs that these women can take such as in laundries, sewing machine operators, bag and clothing manufacture, seasonal work in canneries due to start about April 10, etc.

Women, however, are not taking these jobs. The reason is that they don't pay as well as shipyard jobs and what with the high cost of maids and child care in nurseries, they just can't afford to take them. They are just returning to their homes and taking up their peace time tasks.

New Industries

Little is being heard now on the subject of new industries in the area although behind the scenes a lot of work is being carried on. The Chamber of Commerce is preparing an elaborate book to tell industrial prospects about Portland and what it offers to a new industry. The Chamber's industry committee has about eight or ten of what it considers "hot" prospects for industry in Portland. Some of these prospects would employ from 300 to 500 workers.

The Bonneville Power Administration has its own crew of industrial engineers and salesmen who are also going after new industry. They are also investigating such things as freight rates, etc. In view of such concerted and all-out attacks it is difficult to see how the Northwest can miss having a substantial development after the war compared to its prewar position.

Aluminum Again

Two potlines which have been shut down at the Troutdale plant of the aluminum Company of America are to be operated again, Paul Hirsh, deputy director of the War Production Board, has announced. One line was shut down nearly a year ago and the second was taken out of operation last autumn. The plant managers are seeking additional employees immediately.

Workers who had high hopes of getting into the aluminum fabricating industry through Kaiser's ponton contract at Oregon Shipbuilding Corporation are not so sure now that it looks like that yard will be closed down late this fall. However, with Kaiser talking about truck bodies, railroad cars and aluminum destroyers, anything can happen. This, too, all adds to the general uncertainty.

The War Production Board is alarmed over a decline in Northwest pulpwood inventories. Most pulpwood goes for boxes to package war materials and similar uses (not for newspapers as many people think). It is said that less than a month's supply of pulpwood is now on hand for Northwest paper mills and production is down.

River Traffic Increases

During 1944, 821,639 tons of domestic commerce and traffic tonnage passed through the navigation locks at Bonneville. This compares with 161,902 tons which went through the locks in 1938. All told, 11,426,000 tons of commerce have gone through the locks since they were opened to traffic in January, 1938. Majority of tonnage going through the locks has been on vessels, a large part of which has been wheat, petroleum and similar products, which is about five to one in tonnage over rafted logs and piling.

Unemployment Compensation

The Oregon Legislature, now in session, will be acting this month on several bills that will indirectly affect industry. One of these is the bill which would increase unemployment compensation maximum benefits from $15 a week for 16 weeks to $18 a week for 20 weeks. A worker must earn at least $1440 in his base year to qualify for maximum benefits.

From present reports it seems that when real unemployment comes many workers will draw the full maximum benefits. What is worrying many people is the growing proportion of benefits that are being paid to out-of-state claimants. The State Unemployment Commission report for January states:

"In the face of a big reduction in benefits, payments to out-of-state claimants increased slightly in 1944. Although the increase was less than 10 per cent, the significant fact was that most of the checks went to migrants who had returned to middle western and eastern states. While benefits to Washington claimants were dropping from $69,431 in 1942 to $920 in 1944, payments to workers in Illinois, New York, Texas, West Virginia, Louisiana and several other states were higher than ever before in the history of interstate benefits."

There are some therefore who are not anxious to make the benefits too high if they are to be paid to out-of-state claimants.

WESTERNERS AT WORK...

California

Dean E. Stephan heads reopened firm The Chicago Bridge & Iron Co. at Los Angeles. . . . Jerome Benjamin resigning from OPA takes executive position with Industrial Materials Co., Los Angeles . . . S. R. Bouseman named manager development department, Western Machinery Company, San Francisco, while A. J. Saarinen appointed chief mechanical engineer.

N. K. Anderson elected president Alloy Steel and Metals Company, Los Angeles, filling vacancy left by death of Arthur J. Morse. . . . Herbert Mayer appointed general manager Western Machinery Co. and Western-Knapp Engineering Co., San Francisco. . . . James E. Guillet, formerly pipe maintenance superintendent at Pollock, appointed operations manager Pipe Engineering Company, Stockton. . . . E. C. Rechtin appointed general manager, and W. A. Harrington assistant general manager of shipbuilding division, Bethlehem Steel Co., San Pedro yard, Terminal Island. . . . Vice-presidents elected for Institute of the Aeronautical Sciences: I. M. Laddon, vice-president Consolidated Vultee Aircraft Corp., San Diego; Arthur E. Raymond, engineering vice-president Douglas Aircraft Co., Inc., Santa Monica.

William de Back succeeds Frank L. Burrell, retired manager of Anderson-Barngrover division of Food Machinery Corporation, San Diego. . . . Dr. A. M. Erskine, for the past 16 years with E. I. du Pont de Nemours & Co., Inc., appointed director of research for The Paraffine Companies, Inc. and subsidiary Plant Rubber & Asbestos Work. . . . Lester M. Finkelstein, Finkelstein Supply Co., Los Angeles, appointed one of 15 members of Reusable Iron and Steel Products Industry Advisory Committee, OPA.

Bud Baine of Technical Radio, San Francisco, elected president Los Angeles council of West Coast Electronic Manufacturers Association; Howard Thomas, Packard Bell, becomes vice-president for state organization, and Herbert Becker of Eitel-McCullough, San Bruno, secretary of San Francisco chapter, becomes secretary for the state; James L. Fouch, Universal Microphone Co., Inglewood, treasurer of Los Angeles chapter, also treasurer for state group.

Capt. Gerald M. Sieben appointed as veterans' counselor at San Francisco Shipyard of Bethlehem Steel Co. . . . Robert Montee, previously maintenance engineer for company plant, appointed production superintendent Plastic Die and Tool Corporation, Los Angeles. . . . A. B. Walton, State Box Co., Sacramento, elected treasurer Pacific Division National Wooden Box Association; J. H. Dobbin, San Francisco, elected secretary-treasurer. . . . B. A. Gillies, formerly vice-president of Gruman Aircraft Engineering Corp., Bethpage, N. Y., appointed assistant to Claude Ryan, president, Ryan Aeronautical Co., San Diego. . . . F. F. Evenson, consulting engineer, San Diego, nominated for American Institute of Electrical Engineers after August 1.

James B. Ford, formerly senior aeronautical engineer for Civil Aeronautics Administration and chief draftsman of El Segundo Douglas plant, elected vice-president in charge of engineering, Doak Aircraft Company. . . . Walter L. Eggert appointed assistant to general manager at Moore Business Forms, Inc., Pacific Manifolding Book Division. . . Pembroke Gochnauer, formerly assistant general counsel for California and Hawaiian Sugar Refining Corporation, retained as legal counsel for San Francisco Employers Council. . . . Thomas H. Kepner, formerly staff supervisor of Manufacturing and Repair Dept.,

Westinghouse Electric and Manufacturing Company, Pittsburgh, Pa., transferred to Emeryville plant as production and procurement supervisor.

Hayward C. Thomas, president Clarke Aero-Hydraulics, Inc. of Pasadena, elected 1945 president of Aircraft Parts Manufacturers Association, succeeding T. T. Arden, president Grayson Heat Control, Ltd., who remains on board of directors. . . . Louis G. Berger, formerly apparatus and supply manager of Southern California district, appointed assistant district manager Westinghouse; and Wilbert W. Bell appointed assistant district apparatus and supply manager, both men having offices in Los Angeles. . . . M. P. Greffoz handles field service representation for Torrance Oil Heaters, manufactured by Tivit Products, Inc., Los Angeles. . . . W. O. Bates, Jr. appointed general manager San Leandro plant Caterpillar Tractor Co.

W. H. Jackson replaces A. G. Haglund as chief of foreign and domestic lathe sales, Axelson Manufacturing Co., Los Angeles. . . . Carlton J. Daiss, resigning as assistant vice-president Wells Fargo Bank and Union Trust Co., becomes associated with Charles E. Moore, president of Joshua Hendy Iron Works. . . . Roy Hagen, Calif. Consumers Corporation, Los Angeles, elected 1945 president of Southern California Food Processors Association, with W. E. Beach of McKeon Canning Co., Burbank, treasurer; George Reeves of Sizle Corporation, Los Angeles, vice-president; E. H. Howlett, secretary; Glenn Brubaker of Hemet Packing Co. and James Rogers of Caltone Corporation completing the board of directors.

A. M. Rochlen, director of industrial and public relations for Douglas Aircraft, elected national chairman of Public Relations Advisory Committee of Aeronautical Chamber of Commerce of America to succeed D. L. Lyman; John E. Canaday, public relations manager for Lockheed Aircraft Corporation and chairman of Western Regional Public Relations Committee, and J. W. Sweetser, public relations director for Curtiss-Wright and chairman of Eastern Regional Public Relations Committee, serve as vice-chairmen of the National committee. . . . Carl Lovegren, formerly head of Canners League and previously head of Hunt Bros. Packing Co., San Francisco, becomes president of reorganized United States Products Corporation, Ltd., San Jose, and W. D. Hooper vice-president and salesmanager. . . . C. P. de Jonge appointed superintendent of gas department, San Diego Gas & Electric Co. following death of D. H. Perkins.

Colorado

Fred W. Whiteside reappointed as engineer member of State Coal Mine examining board four year term. . . . H. D.

Tudor, president of newly organized concern, Colorado Fluorspar Mine, Inc.; Joseph W. Cook vice-president; S. F. Wickham, general superintendent; Roy F. Hickman, assistant superintendent. . . . Max Grimes, Morse Bro. Machinery Co., Denver, appointed on committee of Reusable Iron & Steel Products Industry Advisory Committee by OPA.

Montana

Robert P. Porter, president of the Mike Horse Mining and Milling Company elected to the presidency for coming term of Mining Association of Montana, succeeding John Hickey; W. R. Allen of Wise River named first vice-president and K. D. Lynn of Norris, second vice-president; Trauerman re-elected secretary-treasurer.

Nevada

J. R. Loftis, former acting superintendent of Salt Lake Division Rio Grande, takes over duties as vice-president and general manager of Tonopah & Goldfield Railroad, and executive vice-president of Nevada Contracting Co., with headquarters at Tonopah.

Oregon

A. F. Blocklinger, Chiloquin Lumber Co., Chiloquin, elected vice-president for coming year of Pacific Division, National Wooden Box Association; Morris Millbank, Rogue River Lumber Co., Grants Pass, elected president. . . . Ivan H. Moorehouse of Olympic Canning Co. elected president for 1945 by Northwest Canners Assn., Portland; O. E. Snider of Blue Lake Producers Cooperative as first vice-president; F. M. Moss of Idaho Canning Co. as second vice-president, and Harold A. Brock as secretary-manager. . . . Paul M. DeKoning appointed general manager of Jantzen Knitting Mills.

Utah

F. A. Wardlaw, Jr. elected president for year 1945 of Utah Metal Mine Operators Association; E. H. Snyder, first vice-president; James W. Wade, second vice-president; O. N. Friendly, third vice-president; A. G. MacKenzie, Manager. . . . Vincent D. Perry, formerly chief geologist for International Smelting and Refining Company, Salt Lake City, appointed assistant chief geologist in charge exploration in western United States, Mexico, and Canada, for Anaconda Copper Mining Co., parent concern of International; Reno H. Sales succeeds him.

Washington

Earl W. McBratney named district sales promotion manager and Arthur F. Sheean made district lamp manager for Westinghouse, Seattle. . . . W. R. Green of United States Bureau of Mines elected secretary of Northwest Mining Association; Charles E. Marr, Spokane re-elected as president; J. B. Haffner, Kellogg, Idaho, vice-president; Charles P. Robbins, Spokane, treasurer, and Mrs. Margaret Orr continued as assistant secretary. . . . Harry B. Keisler, Dulien Steel Products, Inc., Seattle, appointed on Reusable Iron and Steel Products Industry Advisory Committee.

Diesel Engine Gifts White Elephants

Diesel engines from surplus war stocks donated to universities on the Pacific Coast for use in their engineering schools would be regarded as white elephants, the Diesel Engine Manufacturers Association learned at a joint meeting with educators in San Francisco February 8.

Cost of installation, lack of space, and unsuitability for demonstrating and testing purposes as compared with single cylinder engines or small working models, were the objections offered to the proposal of the manufacturers to supply surplus engines. Instruments, however, would be highly acceptable.

Among the counter-suggestions made by the educators were opportunities for students to spend a year in an engine-building plant, fellowships and scholarships in graduate engineering schools and educational models of diesel engines.

"Dema," as the association has been nicknamed, feels that one of the universities in the Pacific Slope area should provide specialized training in diesel engineering, it was pointed out by Roy Hundley, chief engineer of Enterprise Engine Works, San Francisco. Three or four such courses in the country would be enough, he said.

F. H. Kilberry of Atlas Imperial Engine Co., Oakland, vice-chairman of Dema's educational committee, who presided at the meeting, reported as proof of the growth of diesel engines that the U. S. Navy's total diesel horsepower now exceeds its steam installations.

Safety Award

The first U. S. Department of Labor Certificates of Safety Achievement awarded to any western firm have been presented to officials of The Paraffine Companies, Inc. at their Emeryville, Calif., plant. Five working units of the company earned the certificates by making more than 40 per cent reduction in accidents for the final six months of 1944 as compared with the same period of 1943, and unions which cooperated in the safety campaign also received certificates of achievement.

Colorado's Picture On Future Industry

DENVER'S biggest peace-time industrial employer, rivaled only by the cluster of packing plants that flank the meandering South Platte river at the other end of the city, is the Gates Rubber Co. Laymen know this firm for its tires and batteries, but to industrialists all over America, Gates is known for its industrial rubber products, primarily belting in some 6,000 specialized forms.

What future awaits this aggressive "little" Colorado manufacturer whose prewar sales volume averaged approximately $18,000,000 a year? It must look good, because Gates' current expansion program to meet postwar needs is geared to an annual sales volume estimated to total $50,000,000.

Despite its war assignments, the sprawling red-brick Gates plant on South Broadway is growing fast. Just south of the main plant a half-million dollar addition is going up, and across the street Gates has purchased the block-long three-story building that formerly was the mountain states assembly plant of the Ford Motor Company. Blueprints are ready for another addition to dwarf the Ford building. It will take a lot of plant to keep up with peacetime production, as the Gates company sees it now. Postwar employment will be about 6,000, or slightly higher than current wartime levels, according to closemouthed Gates officials who are noted for playing their cards close to their neatly-buttoned vests.

* * *

Now that America's coal miners own some producing coal mines of their own (and it serves them right, some operators have been heard to mutter!), everybody wants to know just what the miners intend to do with their mines.

This puzzle is to be answered soon in Colorado, when John L. Lewis and his cohorts march into Federal court with a plan for reorganizing the defunct Rocky Mountain Fuel Company.

The miners acquired control of the important Colorado coal producer sometime during the depression when their great and

good friend, Josephine Roche, was the company's president. At the time the company and Miss Roche were being hailed as great friends of organized labor because of its "union cooperation policy" there were unpaid bills, unpaid taxes and unpaid bond interest.

For years Miss Roche met final deadlines by borrowing money from her prominent friends, but at last she turned to John L. Lewis to save the company. Dipping into the ample coffers of the United Mine Workers, Mr. Lewis provided the money Miss Roche needed. The process was repeated many times. Finally the union was calling the tune, and saw that substantial portions of its money went to improve the mines, including complete mechanization of the famous Columbine mine a few miles north of Denver.

One thing the union couldn't see was the necessity of continuing to pay five per cent interest, a back-breaking burden that had kept the company in hot water since long before Miss Roche acquired control of it. So the time came, last fall, when the union's hard-boiled policy prevailed over the sympathy of Miss Roche (her father had sold the company's bonds to friends whose widows and children now depended on that five per cent interest). Then the Company, pushed over the brink by John L. Lewis, went into Federal court and petitioned for a receiver and a plan for reorganization.

In his marble chambers in Denver's handsome Post Office building there is a tapping, tapping of the judicial foot of Federal Judge J. Foster Symes. Very patiently, while a receiver he appointed operates the company nicely "in the black," the judge awaits the plan of the miners for reorganizing the company. With the "water" squeezed out, they may be able to operate "the Rocky" at a reasonable profit.

But what industrialists up and down the Eastern Slope of the Rockies are wondering is what the miners will do with their coal mines? With control, will the miners turn the mines into a worker's Utopia? Or will they play the game by the same rules other operators follow? Admittedly the miners have an opportunity—will they show off, or will they try to make some money out of the Rocky Mountain Fuel Company?

* * *

How to check the migration of skilled workers away from Denver continues to be the main headache of Colorado industrialists. Denver's admittedly low wage scales formerly were offset by low rents and generally modest living costs, and the appeal of the nearby mountains and admirable climate did the rest. At the war's outset, manufacturers with national experience found Denver a wonderland with skilled workers of exceptionally high type in relatively great abundance.

(Continued on Page 62)

COLORADO *(Cont'd from Page 61)*

Moreover, the unskilled workers had the makings, shall we say, of highly proficient semi-skilled and skilled workers. As one official of Remington Arms put it when his company was operating the Denver Ordnance Plant at capacity, "These Westerners from the farms and ranches are wonderful in a factory. If a machine gets out of kilter, they don't send for the service crew. They just fix it, and go on with their work as if nothing had happened."

But word has been getting around that there is something out of joint about wages in the Denver area. Many soldiers who had a chance to size up Denver while stationed at nearby army posts have decided not to settle there after the war, merely because the wages available seem low in comparison with the cost of living. They agree with The Denver Post that "It's a privilege to live in Colorado." The question is, just how much must one sacrifice to enjoy that privilege?

* * *

Denverites frankly are worried about their city's future. The old opposition to industrialization, which dominated the city's thinking until only two or three years ago, now takes a drubbing every time it shows its head.

A few weeks ago the region's older newspaper, the *Rocky Mountain News*, squelched one of its own columnists who had shuddered with horror as he viewed the possibility of "great chimneys within our city belching smoke."

Promptly the *News* disclaimed responsibility and retorted, "Of course Denver wants further industrialization. It has to have further industrialization to continue to develop. Without it Denver would be crushed between a powerful Middlewest and a rapidly developing Utah and Pacific Coast. As for that bogey of 'belching chimneys' of course that is a thing of the past. Under modern methods smoke can be caught and the by-products utilized, so that the city itself never need experience smoke at all. Denver must industrialize further—it will industrialize further!"

Continuing the discussion a few days later, the *News* tackled the problem from a different angle:

"At the University of Denver and at the University of Colorado we are training young men and women to be engineers, chemists, laboratory technicians—experts in many technical fields. But when they come to Denver to get a job they find their opportunities few and far between because of our limited industrial opportunities here. So they go to live somewhere else. . . .

"We are especially disturbed in this respect, by the amazing industrial development on the Pacific Coast. We are afraid that many young men and women from Colorado who in the past have gone to the Middlewest and East will turn their eyes in that direction. Shall we let them go? Or shall we offer them desirable opportunities here at home? The answer lies in the hands of the business and industrial leaders of our community. We hope the answer is: 'Let us save Colorado youth for Colorado'!"

Conciliation Report

In the 11 western states, Alaska, Hawaii and two west Texas counties, the Conciliation Service of the U. S. Department of Labor handled 3,817 disputes in 1944 and brought settlement of 2,916 of them, or 76.4 per cent. Only 824 were certified to the War Labor Board and the remainder are pending. Commissioners settled approximately eight disputes in the west every one of the 366 days during 1944.

Portland Yardstick

Portland's industrial employment in October, 1944, was 323.1 per cent higher than during 1937. It dropped, however, from the same month in 1943. In September, 1944, there were 344,000 employed in industrial enterprises compared to 362,000 in September, 1943, according to the Bureau of Labor Statistics.

REGIONAL REVIEWS
TEHACHEPI TO TIJUANA

SOUTHERN California industry was back to war work with a bang as new contract awards came into the area on a substantial basis. Applications for permission to reconvert . . . or convert . . . to civilian production have dropped to 40 per cent of their former number. Whereas 75 per cent had been approved, the rate now is around 45 per cent.

What permission to change over is given now goes to industries producing some item that is essential in the home or in agriculture. Previously, permission had been granted on items that were not essential, but it was done on the basis that no harm would come to the war effort on the basis of material or manpower, and it was a good idea to keep that plant and its workers as a unit in the event they were again needed on war work. Now the attitude is a little sterner.

Turnover and absenteeism haven't been licked yet, and probably will continue to be vexing problems unless a work or fight measure is adopted. Turnover reached a peak of 10.3 last June and then slowly dropped to 7.6 in December. It is still around that figure according to early January figures. The situation, briefly, is that there is really no control over men above a certain age, and none over women. Women will run 50 per cent higher in turnover and absenteeism than men, and that means quite a bit to the industries that are employing a large number of women.

During the year of 1944 the average monthly rate of turnover for Southern California was 8.85 or 106 per cent on an annual basis. The number leaving jobs was 662,800 and the number of new workers hired was 557,632. Of this number, 368,958 or 70.5 per cent were just quits. Layoffs ran 38,728 or 7.4 per cent. Discharges were 69,081 or 13.2 per cent.

The military services took 35,587 or 6.8 per cent, and the other 10,990 or 2.1 per cent are listed as miscellaneous. The controlled referral plan has helped some, the greater seriousness of the war, and good promotion, but the problem is still there, and is almost as bad as it was from an "average" standpoint of 1944.

Absenteeism runs along with turnover as a problem. For the four final months of 1944, it ran around 7 per cent for the reporting plants and this probably represents the general picture.

Some new figures have been released on the "outs" and the "ins." For December, 5484 workers left Southern California, 1718 for other parts of the state, and 3766 for other states. At the same time, 7700 new workers came in, 2500 from other parts of the state, and 5200 from other states. In the final three months of 1944, 21,493 workers left Southern California and 23,514 came in.

Of course, these figures really don't give us much more than the trend that is going on, because this isn't a check on all people coming into the area. And . . . a worker may not leave this area if he says he is going to leave. He just "disappears." The housing shortage seems to be worse than it ever was despite all of the homes that have been completed. Housing, of course, is not the most reliable indicator, because this could be the result of families taking separate homes instead of continuing to live with relatives or friends.

The one figure that can be studied with interest, however, is the in-migrant figure. Those workers have come to work in war plants, and there just isn't any particular reason why they shouldn't be telling the truth . . . that they came from out of the area or out of the state. The only conclusion that can be reached is that this area is doing better than hold its own in the matter of workers. If the housing situation weren't so desperately bad, it is estimated that even more workers would be coming into the area.

News Round-Up from The Wasatch Front

A FEW weeks ago the No. 1 industrial question in Utah was: Will anyone be willing to take over and operate the Geneva steel plant after the war? The question being asked now is: Who will get Geneva after the war?

Three prospective operators have now formally notified the DPC that when the plant is put up for sale or lease they are interested in making bids—the United States Steel Corporation, builder and wartime operator of the plant, Henry J. Kaiser, and the Colorado Fuel & Iron Company.

Meanwhile evidence that the plant will be in a favorable economic position, provided the peacetime Pacific coast market can absorb its output, continues to accumulate. According to Sam H. Husbands, president of DPC, the earned gross profit of the Geneva operation for January was in excess of $900,000, before making deductions for taxes and depreciation. This, of course, cannot be accepted as a gauge of what the plant can do under peacetime competitive market conditions, but it is at least indicative.

Current operations are at 85 per cent of capacity and the plant's allotment of shell casing steel has been boosted to 20,000 tons for March. The February allotment was about 13,000 tons.

The Utah legislature has shown some concern about the future of the plant. Provision is being made to provide the public service commission with funds to fight for a favorable freight rate, if it must be gotten the hard way. And steps have been taken to create a state surplus property board, which could serve as an intermediary for a desirable purchaser or lessee.

More Coming In

Utahns who have been cautioning against discouraging postwar industrial development by "rocking the tax boat" were somewhat dismayed when a bill to impose a flat 5-cent per ton severance tax on all natural resources was introduced into the senate. Being applicable to coal, iron ore, limestone, manganese and all the other raw materials which enter into the production of steel, the tax would have increased Geneva's annual overhead by about $275,000, at capacity production. But there is a big difference between introducing and passing a bill. And it was apparent as the session neared its close that the severance tax measure was fated to die in sifting committee.

The tax would have fallen heaviest on Utah Copper Company, amounting to about $4000 per day on a basis of 1944 production, which was substantially below capacity or the 1943 rate.

Problem Still Remains

The entire nonferrous metal industry, in fact, has shown a sharp decline in production during the past year. For example Utah's 1944 copper production was off 18 per cent, lead 20 per cent, zinc 13 per cent, silver 18 per cent and gold 13 per cent. The big reason for the slump was manpower—inadequate quantity and deteriorating quality. Another reason—a minor one perhaps—was morale within the industry. The "on again off again" policies and attitude of the War Production Board has created an "I should worry" attitude among the metal producers.

Vanadium Corporation of America is seeking manpower to reopen the DPC's vanadium mill at Monticello in southeastern Utah. The mill closed last spring when officers of the Metals Reserve Company decided that adequate reserves were on hand. But the metal has returned to the

critical list and producers are being urged to increase the output. Heretofore Vanadium Corporation has operated the plant as an agent of the DPC. But the company has now leased the facility, purchased a stockpile of ore from the government and will operate its own. If the results are satisfactory the company plans to operate mines and purchase ore again. The deposits are small and scattered, requiring extensive prospecting.

An interesting experiment in labor-industry cooperation grew out of the 1945 session of the Utah legislature. Instead of bumping their skulls together and placing the lawmakers in a position where they had to make all the decisions, the two groups got together, worked out their own compromises on controversial bills and presented the finished product to the two houses. The legislators, relieved and happy to escape the two-way pressure, enacted the bills agreed upon without even reading them.

The industrial compensation, occupational disease and unemployment insurance acts were all revised, in the liberalizing direction, by this procedure. Both sides were so pleased with the result that they are now talking about making the council a permanent fixture for the settlement of labor-industry disputes.

Veteran legislators expressed the hope that it would become permanent. Senator Ira A. Huggins, attorney who has served in the senate for 14 years, said it was the finest example of a sensible and sound approach to legislation he had ever witnessed.

Not all of the credit for the cooperative job can be given to the labor and industry groups. Members of the house committee on labor were responsible for starting the plan rolling. Labor and industry lobbyists began calling each other names over the industrial compensation bill when it first made its appearance. The committee called representatives of the two groups into a public hearing; informed them that they wanted a bill which both sides could endorse and gave them one week to work it out. If they failed, the committee members warned, the legislators would revise it themselves, with no promises to anyone.

Dried Fruit Tonnage Down

California dried fruit pack for the year 1944 is estimated by Harry C. Dunlap, executive vice president of the Dried Fruit Association of California, as follows, in tons:

	1944	1943
Apples	4,500	8,932
Apricots	24,000	6,556
Figs	30,750	36,350
Peaches	25,000	16,495
Pears	3,000	3,710
Prunes	155,000	195,496
Raisins	260,000	662,435

Pilot Oil Shale Mine at Rifle

A site in the Anvil Points area, seven miles west of Rifle, Colorado, has been selected by the Bureau of Mines for a $1,500,000 oil-shale demonstration plant. Major parts of the Rifle plant will include a 200-ton-a-day shale mine which can be enlarged if necessary; a 1½-mile-long aerial tramway to carry the shale from the mine to the plant, and crushing and retorting equipment of a capacity adequate to provide useful information on methods of operation and costs for private industry. A shale oil refinery of pilot-plant scale will be added later.

Although the whole surface of some 950 square miles of northwestern Colorado to a depth of 1500 feet in some parts contains oil shale, an underground mine will be built because the richest bed within practicable reach is one 69 feet thick which is covered with 200 to 500 feet of leaner shales.

Experiments carried on by the Bureau at the Colorado School of Mines have produced 495 gallons of oil from 12 tons of shale, or a 42-gallon barrel per ton.

A research and development laboratory is planned for Laramie, Wyoming, where studies will be conducted to find the best retort for distilling the shale.

LABOR
AND THE INDUSTRIAL WEST

A POLICY of approving vacations on a prorated basis in voluntary cases was adopted by the Tenth Regional War Labor Board at San Francisco February 28. The enunciation of policy (industry members dissenting), resulted from the necessity of making a decision on the Soule Steel Co. case at Los Angeles, and the Board adopted the same schedule worked out by the Regional Board at New York City. It is as follows:

Length of Service	*Vacation Allowance*
6 months	½ week
9 "	¾ "
1 year	1 "
2 "	1¼ "
3 "	1½ "
4 "	1¾ "
5 "	2 "

Vacation pay may be based on a straight time rate for a 40-hour week, a regularly scheduled work week, or average hours worked during 13 weeks preceding the vacation period. Vacation allowance will not be prorated for workers employed less than six months. If the vacation pay is figured on a percentage basis, the schedule is as follows:

Time	*Rate*
Less than 2 yrs.	2% of annual straight time earnings*
2 years	2½% of annual straight time earnings
3 "	3% of annual straight time earnings
4 "	3½% of annual straight time earnings
5 "	4% of annual straight time earnings

**Including shift premiums but excluding overtime unless it is shown to be the practice in the establishment or industry to include overtime.*

Previously the San Francisco board had approved vacations on the basis of one week after one year and two weeks after five years, unless it was shown that a more liberal schedule was area or industry practice. In dispute cases, vacation demands will be decided on the merits of each individual case, it was announced, which means that the practice in voluntary cases will be generally carried over into the dispute cases.

The wage stabilization division has issued the following schedules for allowing vacation time when computed on an hourly basis:

40-HOUR WEEK

End of Year	*Hours Allowable*	*Days Allowable*
1	40	5
2	50	6¼
3	60	7½
4	70	8¾
5	80	10
	Total	37½

48-HOUR WEEK

End of Year	*Hours Allowable*	*Days Allowable*
1	48	6
2	60	7½
3	72	9
4	84	10½
5	96	12
	Total	45

Labor members of the Tenth Regional Board feel that vacation allowance should be earned in direct relation to time served. They dissent to a recommendation of the wage stabilization division, that in the case of an employer allowing one week vacation after one year and two weeks after two years, the employees should earn their vacation allowance in the second year at the rate of one half-day per month and after the second year at the rate of one day a month. They point out that a worker serv-

ing 23 months would receive 11½ days vacation for 23 months service, as against 18 days for 24 months.

National War Labor Board policy, regarding the 1 for 1 and 2 for 5 vacation plan as laid down in its wage manual, states:

"Vacation plans providing for one week's vacation after one year's service and two after five may be approved even though this plan is not the prevailing practice in the industry or in the area. It is within the discretion of the National Boards and Commissions whether to approve or order this vacation plan in a particular case; a different type of plan may be deemed more appropriate under the particular circumstances. However, the mere fact that other employees in the same plant are given vacations of less amount is no reason for refusing the standard vacation plan to the bargaining unit involved in the case."

The Regional Board at Seattle had not adopted a prorating policy at last reports, but the policy of the Board at Denver is as follows:

"The wage stabilization division of the Regional Board will approve proposals to prorate vacation pay for less than one year if the service is on the basis of three months intervals. Thus, for the first three months, the worker is entitled to 25 per cent of his vacation pay allowance for the first year; for the first six months, 50 per cent, and so on. If the employer desires further refinement of the monthly basis, this may be granted.

"Proration plans for interpolation of vacation pay between the beginning of the second and end of the fourth are also approvable. This approach would be to permit in the second year an increase of 25 per cent pay allowance for the first year of service and for each additional year of service up to the fifth year. Subdivision within those years is also allowable. Where the existing vacation plan is more liberal than the standard set by the Board, prorating within the limits of the existing plan is permitted.

"Prorating of vacations has been an issue in only one case, in which the following was ordered: employees with six months but less than nine months of service receive one-half of one week's pay; employees with nine months but less than one year of service receive three-fourths of one week's pay; employees with one or more of service receive one week's pay."

Conciliation Ends 2,916 Disputes

There were 3,817 labor disputes in the 11 Western states, Alaska and Hawaii during 1944 and the Conciliation Service of the U. S. Department of Labor settled 2,916 of them or 76.4 per cent, by bringing employers and employees into full agreement on the issues involved.

Smelter Agreement Increases Production

Pacific Coast smelter production will be increased materially after the war, the American Smelting & Refining Company announced early in March following settlement of labor disputes at its San Francisco and Los Angeles plants.

Following the settlement, officials of the company joined with officers of the International Union of Mine, Mill and Smelter Workers (CIO) in a statement that their relations now are better than at any time during the last nine years of collective bargaining.

The amicable understanding followed a ruling by the Nonferrous Metals Commission in which six points at issue between the company and the union were settled voluntarily and four issues raised by the union were denied. These were requests for a general wage increase, a guaranteed annual wage, sick leave and severance pay.

Employees of the company at Los Angeles withdrew demands for wage increases after the company agreed to a simplified wage structure which was approved by the Commission. Request by the union for a wage increase at the San Francisco plant was denied by the Commission, with the understanding that the wage question may be reopened in the event of a change in national wage policy.

Bonus Systems May Bring Higher Scales

Transition of company bonus systems into higher wage scales was foreseen in a decision by the Regional WLB at Denver in March, wherein it was ruled that a bonus which has become an integral part of a company's wage structure may be incorporated into wages without constituting a wage increase.

The ruling concerned a case involving the Otis Gin & Warehouse Company, Loving, New Mexico. Its 54 employees are represented by the International Union of Mine, Mill & Smelter Workers.

The board approved the abolition of the existing bonus plan which called for payment of 50 cents for each eight-hour day worked, by increasing the hourly wage rates for all employees by 6¼ cents an hour.

The issue was decided on four counts:

(1) The 50 cent a day bonus was approved by the parties and paid during the last contract year.

(2) Payment of the bonus did not rest exclusively within the discretion of the employer.

(3) The bonus had become an integral part of the wage structure.

(4) Its incorporation into the hourly wage rate will not constitute a wage increase.

While favoring the union in the ruling to do away with the bonus system, the Board denied an appeal by the union to raise wages 15 cents an hour to bring rates up to those in the nearby potash mines. Vice Chairman Herbert Fuchs asserted:

"The hearing panel concluded, with labor dissenting, that a merger of the rates paid by the traditionally high wage potash industry and those paid by the traditionally low wage cotton seed mills and cotton gins was unjustified."

More DPC Plants Listed as Surplus

Defense Plant Corporation has listed additional plants and facilities that have become available for sale or lease since the previous list issued October 14, 1944. Western plants included in this list with the name of the former operator are the following:

Compak Foods, Inc., Santa Ana, Calif.; complete plant, 41,200 sq. ft.; dehydrated vegetables.

Anaconda Copper Mining Co., Columbus, Montana; complete; chrome ore.

Manganese Ore Company, Las Vegas, Nevada; complete, 69,100 sq. ft.; process manganese oxide nodules.

Blanding Mines Company, Blanding, Utah; complete; vanadic oxide.

Wilkeson Products Co., Tacoma, Wash.; complete plant, 6,305 sq. ft.; metallurgical coke.

Wilkeson Products Co., Wilkeson, Wash.; complete; coal.

Southwestern Engineering Co., Marshfield, Ore.; complete, 8,740 sq. ft.; chrome concentrates.

United Engineering & Foundry Co., Troutdale, Ore.; land, approx. 114 acres.

Wage Rate Increase Slight

Basic wage rates of employees in manufacturing industries increased only 1 per cent in Pacific Coast cities from April, 1944, to October, 1944, which was less than in any other part of the nation, reports William A. Bledsoe, regional director of the U. S. Bureau of Labor Statistics. The national average increase was 2.2 per cent and Middle Atlantic cities averaged a 3.5 per cent rise during the six months.

Seattle's increase was second lowest in the nation, four-tenths of one per cent compared with Detroit's three-tenths of one per cent rise. In San Francisco and Portland the increase was eight-tenths of one per cent, while Los Angeles showed a one and three-tenths per cent advance in basic manufacturing wage rates.

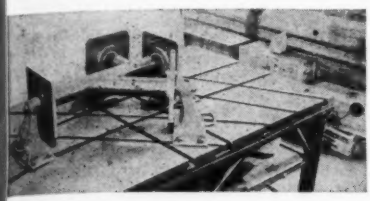
"Travel Time" Suit

Legal action against Smith Wood Products, Inc., of Coquille, Ore., to force payment to employees for "travel time" in the woods, has been started in Portland, Ore., by the U. S. Department of Labor. The suit is the first filed under the enforcement policy which the federal Wage and Hour Division announced as effective on December 4 and is a request for an injunction against further violations of the Fair Labor Standards Act (federal wage hour law) by the logging and lumber concern.

EFFICIENCY KINKS FROM WESTERN PLANTS

Production short-cuts • Worker's suggestions • Prize-winning awards

FABRICATION of pipe spools, tees and ells at the Puget Sound Navy Yard has been considerably improved and speeded up as a result of use of a setup table and metal holders for positioning the pipes preparatory to welding. The former method of using wooden forms nailed together consumed considerable material, and in addition, necessitated the construction of forms from time to time.



• Table for setting up and aligning spools, tees, ells and other pipe forms in the correct position preparatory to tack-welding.

Using the present method, the pipe holders are mounted on a table and the pipes are placed in the holders. It is noted that the holders may be moved freely on the table and when the proper setting is obtained, the holders are locked in position on the table by means of tee slot bolts and nuts. With the pipes thus set, tack-welding operations may proceed.

The idea came from E. L. Hetrick, as a suggestion submitted under the navy employees suggestion program. An increase in production of 200 per cent has been realized as a result of adoption and use of the suggested device and annual savings of $1400.00 is reported.

Wayne Major, electrical maintenance leaderman at one of the Richmond shipyards, won a Labor-Management Committee first prize award with an electric contactor. Its purpose is to eliminate circuit trouble and maintenance time caused by sticking contacts in the operation of automatic starters on welding machines.

Sometimes when the welder struck his arc the electro-magnetically operated relay contacts became welded together. This caused the circuit fuse to blow the next time the arc was struck, and production on that machine stopped until a maintenance electrician could be secured to free the relay contacts and to re-fuse the control circuit.

The electromagnetically operated relay, being unsatisfactory, Wayne Major replaced it with a plunger switch mounted on the side of the contactor frame. The plunger is moved by a shoe which is carried by the movable contactor armature. When the main contacts close, the armature brings the shoe into engagement with the end of the plunger, depressing the latter and opening the control switch. Even though arcing occurs between the switch washer and contacts, with Major's method no sticking will occur since a momentary fushion will be broken loose by a forceful pull of the armature.

C. H. Neagle, gas tender at the Colorado Fuel & Iron Corporation's wire mill at Pueblo, won a Labor-Management production award for his suggestion that a covering be made for the well and fire end of heat controllers on lead and zinc pans, which protected the well from filling up and the fire end from becoming shortcircuited through lead falling from the wires. He has a no lost-time accident record during his entire 32 years of service.

Carl Peterson, riveter superintendent at Moore Dry Dock Company, Oakland, won two prizes of $25 each for a double acting plate puller and with a riveting gun cooler. The gun cooler is made to fit over the end of the gun and uses escaping air to reduce temperature. This allows the operator to perform continuous work, driving some 1,009 rivets per eight hours.

THE PICTURE

Employment in the shipyards is beginning to drop off as a result of the contraction in building of new ships, the February keel layings in Maritime Commission yards being eight less in February than in January. Aircraft employment, however, has started to rise slightly, although this has not yet been reflected in increased output from the airframe factories. Electric power demand has begun to drop off in California and the Pacific Southwest, but the Federal Power Commission reports that demand has not turned the corner in the Pacific Northwest.

Lumber—*British Housing*

Lumber production has held up strongly against difficulties in the lack of manpower and the lack of truck tires and many other items of equipment, the West Coast Lumbermen's Association reports. Log production dropped somewhat in the cold weather of late winter and the industry faces the danger of a dwindling log supply that would adversely affect lumber production during the summer months.

Meantime, military needs for lumber are again very critical. WPB Director Krug has coupled the urgency of lumber requirements to the need for B-29 bombers.

In addition to large Pacific shipments of West Coast lumber and the heavy requirements for packaging munitions of all kinds to supply both fronts, a new factor has entered the picture in immediate housing restoration for England and the liberated countries in Europe. The construction of prefabricated homes in England is already under way and orders for lumber to be shipped directly to England are about to be placed. Prefabricated barracks are being erected for longshoremen and other dock workers in France.

Cumulative figures for 9 weeks in 1945 and previous years in thousands of board feet reported by the West Coast Lumbermen's Association are as follows:

	1943	1944	1945
Production	1,065,009	1,451,847	1,332,322
Orders	1,777,086	1,557,338	1,462,432
Shipments	1,444,943	1,420,455	1,332,782

Western Pine Association figures covering Idaho White pine, Ponderosa pine, Sugar pine and associated species for the current year to February 24 are as follows:

	1944	1945
Orders	566,455	498,685
Shipments	551,849	512,130
Production	409,963	407,054

Aircraft—*Production Steady*

Despite three less working days in February, the Pacific Coast aircraft factories were able to maintain practically the same rate of production as in January.

Figures from the Western Procurement District, Air Technical Service Command, are as follows:

	No. of Planes	*Total Poundage*
August	1,930	26,391,000
September	1,802	26,293,000
October	1,609	21,960,000
November	1,499	20,821,000
December	1,488	21,035,000
January, 1945	1,630	22,440,000
February	1,436	21,146,000

Ships—*Keel Layings Shrink*

February figures from the Pacific Coast Maritime Commission yards reveal the beginning of the end in new ship construction. Keel layings dropped to 42, from the January figure of 5[illegible]

	Launchings Ships	Deliveries Ships	Thousands Deadwt. tons
June	50	55	516
July	58	38	399
August	41	32	295
September	46	44	407
October	56	51	461
November	54	60	439
December	54	53	494
January, 1945	52	52	523
February	45	55	567

(Includes destroyer escorts and small aircraft carriers, but not larger naval vessels built by the [illegible] itself. Also includes concrete barges, but not [illegible] wooden barges. Tonnage figures from September [illegible] are adjusted, previous months unadjusted. Deadweight tons are used as a rough measure of the cargo carrying capacity of the ship. All figures from U. S. Maritime Commission statistical department.)

Cement—*1944 Recession*

Total figures for 1944 show that California cement output declined 14 per cent from 1943, Washington and Oregon 21 per cent and the Colorado-Wyoming-Utah-Idaho district 31 per cent. The national decline in cement output and shipments was less, however, than the falling off in total construction activity, and the Western area showed a smaller drop in cement than the national average.

PRODUCTION
(In thousands of barrels)

	—California—		Oregon-Wash.		Colo.-Wyo. Mont. Utah-Idaho	
	1944	1945	1944	1945	1944	19[illegible]
Jan.	1,080	1,258	317	269	156	17[illegible]

War Production Contracts—*January Bookings Up*

In Thousands of Dollars—Source: War Production Board Statistical Division

NOTE: *The monthly award figures shown below represent only an approximation of the actual contracts, because cut-backs and cancellations are usually on previous awards, although reported in the current month. Also there is considerable lag in the reporting of individual contracts. However, WESTERN INDUSTRY is reporting the monthly awards by the successive subtraction method as an approximation.*

	MONTANA	—IDAHO—	WYOMING	—COLORADO—			N. MEX.	— ARIZONA —			—UTAH—		— NEVADA —	
	All Other	Ships	All Other	All Other	Aircraft	Ships	All Other	All Other	Aircraft	Ships	All Other	Aircraft	All Other	Ships	All Other
August 1944	4,282	75	5,998	—2,993	—1	—32	305,077	2,743	209	...	844	...	150,198	...	—1,[illegible]
September	211	141	220	1,016	52	....	2,200	....	100	401	3,716	...	400	...	1,[illegible]
October	135	...	329	1,620	..	139	803	....	—57	...	64	...	240	...	[illegible]
November	95	80	533	740	...	...	2,459	101	...	206	454	...	49,550	...	[illegible]
December	7,756	...	76	1,259	...	...	—435	—141	...	—58	30	...	197,361	...	...
January 1945	7,892	...	19	—58	...	...	—3,674	—979	...	116	18	...	294,722	...	1,[illegible]
Total from June 1940	29,728	787	6,050	40,425	1,828	3,739	93,296	8,408	59,347	1,104	28,209	900	613,774	156	33,[illegible]

	—WASHINGTON—			—OREGON—			—CALIFORNIA—			—TOTAL—		
	Aircraft	Ships	All Other	Aircraft	Ships	All Other	Aircraft	Ships	All Other	Aircraft	Ships	All Other
August 1944	714,598	—13,227	119,172	...	28,607	15,206	189,082	—108,152	—12,134	903,890	150,093	616,[illegible]
September	82,689	6,287	70,190	...	2,081	5,057	122,840	44,758	32,032	205,681	53,668	134,[illegible]
October	....	—15,877	14,475	...	—171	805	—169,020	—13,111	40,631	—169,070	—30,020	59,[illegible]
November	133	38	12,205	357	15,689	7,554	—71,414	—27,822	33,102	—70,924	—11,809	104,[illegible]
December	....	21,408	490	...	2,659	—5,108	—137,791	—15,400	—16,145	—139,791	—54,050	185,[illegible]
January 1945	43,256	36,524	—3,347	86	—55,076	—16,964	—287,789	—285,556	—98,315	—244,447	—303,992	—363,[illegible]
Total from June 1940	1,929,226	2,129,729	312,891	1,476	1,230,948	118,905	9,309,880	4,014,328	1,500,095	1,450,999	7,299,478	2,171,[illegible]

Electric Energy—*Winter Demand*

Production of Electric Energy for Public Use—In thousands of Kilowatt Hours—Source: Federal Power Commission

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mtn.	Washington	Oregon	California	Total Pacific
January 1944	223,286	94,952	19,417	96,960	42,346	290,005	57,904	331,055	1,155,925	964,314	406,851	1,281,484	2,653,649
February	202,057	84,639	18,023	87,611	37,891	291,969	50,490	314,546	1,087,226	928,634	376,321	1,280,331	2,585,256
March	212,801	104,566	18,822	89,928	40,994	286,847	46,275	324,633	1,124,866	943,329	402,195	1,322,532	2,668,156
April	189,938	122,178	18,793	85,954	42,287	284,140	33,462	262,097	1,038,849	890,599	370,914	1,372,445	2,633,958
May	190,926	113,473	19,454	87,365	41,077	297,189	38,291	284,604	1,071,379	854,064	417,654	1,397,484	2,669,202
June	191,704	104,360	22,250	84,548	42,172	285,599	38,255	271,433	1,071,529	854,031	417,654	1,401,465	2,670,559
July	217,474	127,101	24,459	87,399	44,306	331,454	24,390	256,538	1,113,121	779,929	438,373	1,521,569	2,739,871
August	220,673	128,274	30,999	91,641	47,468	357,053	25,137	272,598	1,173,843	781,757	466,110	1,451,720	2,699,587
September	192,753	105,757	23,160	88,678	42,763	343,750	24,431	229,951	1,051,249	780,323	386,453	1,304,797	2,471,573
October	203,033	81,574	19,303	93,893	41,834	354,936	30,867	236,822	1,062,262	811,621	387,819	1,238,409	2,437,849
November	203,016	84,341	19,966	92,236	42,643	327,579	32,750	225,128	1,027,659	842,505	364,874	1,157,252	2,364,671
December	212,383	83,551	19,772	98,459	45,091	317,797	37,743	234,997	1,049,793	903,612	351,814	1,227,941	2,483,367
January 1945	206,308	93,238	22,308	97,875	44,414	331,221	37,814	234,314	1,067,492	951,927	331,785	1,258,597	2,542,309

Coal—*Monthly Figures*

Reports by United States Bureau of Mines

	Montana	Wyoming	Colorado	New Mexico	Utah	Washington	Other	Total
October, 1944	464,000	834,000	677,000	141,000	545,000	125,000	1,000	2,787,000
November	426,000	892,000	663,000	145,000	590,000	118,000	2,000	2,836,000
December	478,000	874,000	718,000	135,000	580,000	128,000	2,000	2,915,000

Employment—Eleven Western States

Estimated Number of Employees in Non-Agricultural Establishments—In Thousands—Source: U. S. Bureau of Labor Statistics

ALL INDUSTRY DIVISIONS

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mountain	Washington	Oregon	California	Total Pacific
July	110	95.1	62.6	265	79.5	107.0	155	41.6	916	645	336	2,599	3,580
August	110	94.1	62.9	264	79.7	105.9	154	41.5	912	643	342	2,617	3,602
September	109	97.6	62.2	267	79.4	105.2	151	40.3	912	650	544	2,591	3,585
October	109	96.9	61.9	267	79.1	105.0	149	38.9	907	645	339	2,579	3,563
November	110	97.5	61.6	266	78.8	105.9	149	38.7	908	642	339	2,547	3,528

MANUFACTURING

July	13.1	16.0	4.4	49.2	5.1	16.4	34.2	3.0	141	268	137.1	953	1,358
August	13.2	14.3	4.7	47.7	5.1	16.9	33.0	3.0	138	264	141.6	964	1,370
September	12.9	17.3	4.7	47.2	5.1	16.8	29.9	2.6	137	267	144.8	942	1,354
October	14.0	16.7	5.0	49.4	5.1	17.2	30.8	2.3	141	266	140.1	918	1,324
November	13.8	17.3	5.1	49.9	5.0	17.8	29.7	2.0	141	261	141.0	889	1,291

The 14-month continuous contraction in California aircraft production employment was halted in January as the factory force of this industry rose to 158,200, a gain of 800 from December, the California Division of Labor Statistics reports. The aircraft production force this January, however, was 67,000, or 30 per cent, below a year ago.

Contrasting with the December-January increase in aircraft employment, shipyards (excluding government yards) lost 5,300 wage earners, the largest month-to-month decrease since June 1944. The production force in shipyards dropped to 216,100 this January from 221,400 in December and 271,900 in January 1944.

The number of wage earners in durable goods industries as a whole declined to 558,700 in January from 565,900 in December, a loss of 7,200. The current level is 140,100, or 20 per cent, below January 1944.

Continuing the trend of the past two months, the production force in chemical, petroleum, and rubber industries increased between December and January. Production employment in nondurable goods industries as a whole this January was 11,700, or 7 per cent, above the year-ago level of 179,500.

EMPLOYMENT—DURABLE GOODS INDUSTRIES

(Figures from Calif. Div. of Labor Statistics)

	San Francisco Bay Area	Los Angeles Indus'l Area	Total State
January 1944	221,200	369,200	698,800
February	218,600	363,600	689,600
March	212,100	354,700	670,900
April	205,000	347,900	655,700
May	202,200	339,400	645,100
June	196,700	325,500	625,400
July	192,000	320,900	616,700
August	189,200	315,700	605,400
September	188,500	301,400	585,800
October	184,300	295,000	290,400
November	183,300	291,700	568,900
December	182,300	290,400	565,900
January 1945	178,600	288,400	558,700

Tons of Revenue Freight Originated and Terminated by States

(Source: *Interstate Commerce Commission*)
(Carload Shipments—Class I Railways)

	Originated	Terminated
PACIFIC		
Washington		
July, 1944	1,797,286	2,166,369
August	2,183,399	2,557,029
September	2,002,536	2,318,333
Oregon		
July	1,476,884	1,209,299
August	1,627,312	1,324,930
September	1,478,515	1,242,906
California		
July	4,179,251	4,693,442
August	4,364,095	5,260,390
September	4,382,731	5,228,629
MOUNTAIN		
Montana		
July, 1944	613,299	321,194
August	742,390	391,479
September	882,678	417,217
Idaho		
July	379,672	310,230
August	465,673	325,908
September	624,170	356,844
Wyoming		
July	426,210	84,845
August	479,724	95,127
September	555,160	115,905
Colorado		
July	813,878	767,045
August	1,096,022	957,655
September	1,056,429	913,723
New Mexico		
July	293,979	175,657
August	373,734	218,032
September	328,697	206,503
Arizona		
July	337,369	434,359
August	268,587	420,560
September	228,193	411,337
Utah		
July	906,614	753,060
August	1,025,077	863,528
September	996,421	808,592
Nevada		
July	160,949	210,749
August	213,583	217,255
September	217,301	171,457

Oil—More In, Less Out

Pacific Coast territory supply and deliveries drew together in January by virtue of an increase in supply of 15,000 barrels daily and a decrease in deliveries of 27,000 barrels daily. Consequently, only 79,000 barrels daily was drawn from storage compared to a withdrawal of 121,000 barrels daily in December, when new high record deliveries were made.

	All Products (Bbls.) 1943	1944
May	852,000	900,000
June	973,000	969,000
July	918,000	884,000
August	983,000	883,000
September	992,000	902,000
October	987,000	945,000
November	962,000	992,000
December	1,022,000	1,093,000
Jan.-Dec. Average	914,000	962,000
	1944	1945
January	993,000	1,066

Copper—4% Decline

Production of the combined Western states decreased 2,648 tons (4 per cent) in January from the December output. Expanded operations at all of the chief copper producers in Arizona boosted the January output 1,158 tons over the December production. Although the Utah copper production decreased 959 tons in January, the monthly output is about normal for the available manpower. Because of the larger output of copper ore from the Anaconda Copper Mining Co. property at Butte, the January production from Montana was 401 tons above the December total.

Production figures from the Western states, in short tons, are as follows:

	Ariz.	Mont.	Utah	Tot. Western, including other states
Jan.-March	102,224	35,421	79,046	255,624
April	33,967	10,683	24,545	82,822
May	33,832	10,668	24,979	82,108
June	31,369	8,969	23,421	77,964
July	28,067	8,130	22,000	77,964
Sept.	25,683	8,523	21,947	69,115
Nov.	23,250	8,929	20,370	64,107
Dec.	24,092	8,499	21,209	67,046
Jan. (prelim.)	25,250	8,900	20,250	64,398

Freight—Drop Continues

Total traffic figures for the railroads in the Far West are as follows:

	Loadings	*eastern connections*	*Total*
March 1944	421,188	320,763	741,951
April	489,777	336,101	825,878
May	505,610	333,480	839,090
June	559,037	333,709	892,746
July	746,085	418,866	1,083,124
August	709,486	404,070	1,113,556
September	755,486	450,180	1,205,666
October	683,830	421,898	1,105,728
November	657,927	425,197	1,083,124
December	721,001	492,666	1,213,667
January 1945	564,860	375,156	940,016
February	529,358	379,734	909,092

Iron—Output Climbs

December and January iron ore figures from Utah and Wyoming show a big jump but the California production dropped considerably, although not enough to offset the increase in the other two states.

IRON ORE SHIPMENTS FROM MINES

(Reported by Bureau of Mines)

	Utah	Wyoming	Calif.	Total
May	134,733	70,535	54,477	259,745
June	93,699	64,652	63,055	226,406
July	126,514	47,962	60,908	235,384
August	134,742	35,721	52,426	222,889
September	129,586	47,119	32,596	209,301
October	145,157	39,161	54,545	238,863
November	127,855	48,378	71,034	247,267
December	160,801	51,508	37,231	249,540
January	175,735	65,318	33,205	274,258

Pig iron and steel production for the Western area of the United States are reported by the American Iron and Steel Institute in net tons as follows:

	January	Percent of capacity	Year to date	Percent of capacity
Pig Iron	172,223	71.5	172,223	71.5
Steel Total	367,927	88.2	367,927	88.2
Alloy Steel*	2,549	.....	2,549	.....
Carbon Ingots, Hot Topped*	52,514	.....	52,514	.....

**Included in total steel.*

THE TREND

Increase in aluminum output may be expected for the next few months, in view of WPB authorization for reopening of Western plants, and the sharp January rise in iron ore shipments indicate that the metal working trades have plenty of work to keep them busy for many months to come. A surplus of female industrial labor has come to light in the San Francisco Bay area, but the California Metal Trade Association reports immediate employment available for men released from shipyards and metal processing plants. Carloadings show a shrinkage.

THE WEST ON ITS WAY

ARIZONA

INCREASE IN DPC CONTRACT—Goodyear Aircraft has received increase in contract for authorization to provide additional plant facilities at Litchfield Park, at a cost of approximately $500,000, resulting in an over-all commitment of approximately $9,700,000.

CALIFORNIA

WPB AUTHORIZATION—Norris Stamping Company has received WPB authorization to increase its plant facilities by 50 per cent with a $246,230 brick and reinforced concrete building, to amplify its artillery shell production. Machine tools valued at $275,000 will be installed.

FIRM ESTABLISHED—Harmon Products of Los Angeles has been established by Forrest G. Harmon, formerly manager of Pacific Tube Company, in association with R. Perry Kilsby and Gerald Graham, as a warehousing, processing and special finishing firm for specialty metal products. The company has leased the former Bergstrom warehouse on East Slauson.

DYEING FACTORY—The United Piece Dye Works of Lodi, New Jersey, has purchased factory building at 5000 Long Beach Avenue and is installing modern machinery for dyeing and finishing synthetic and mixed fabrics.

NEW ORANGE JUICE PLANT—California Fruit Growers Exchange, Los Angeles, have confirmed current announcements of their plans for a new $400,000 juice plant at Ontario.

BABY FOODS—Harold H. Clapp, Inc., has started construction and will operate its own $65,000 baby food canning plant in Santa Clara on a 19-acre site at Newhall Street and Campbell Avenue.

SHIP REPAIR—Consolidated Steel Corporation, Ltd., has entered the ship repair and conversion business with the allocation to its Wilmington yard by the Navy and the Maritime Commission of a new 14,000-ton sectional steel floating drydock. The new dockside repair yard at Terminal Island when completed gives Consolidated four operations in the Los Angeles-Long Beach Harbor area: Wilmington yard, Craig yard, Pico Street yard and Terminal Island yard, employing 25,000 men and women.

STEEL—The San Jose Steel Company has started work on a $40,000 plant at Bayshore Highway and McKee Road, San Jose.

CONTRACTS—O'Keefe & Merritt Company have received approval by the area production urgency committee of contracts totalling more than $7,000,000 for diesel-driven generator sets for the Signal Corps. Of this total, $5,000,000 represented work subcontracted in the South by a Detroit manufacturing plant.

EXPANSION PROGRAM—Sun Harbor Packing Co., San Diego, has started $150,000 expansion program centered around additional refrigeration and cold storage facilities to be ready by peak tuna pack time this summer.

ORGANIZATION—Dempsey-Hudson Packing Co., Salinas, has been organized to take over the freezing capacity and facilities of Monterey Brewing Co.

PERMANENT GROUP OF ENGINEERS—Engineers long associated with Henry J. Kaiser and responsible for the design and construction of some of the world's outstanding projects, have been organized as a permanent group known as Kaiser Engineers, with headquarters in the Kaiser Building, Oakland.

PRODUCTION QUOTAS—East Bay Refrigerator & Fixture Co., Oakland, and War Refrigeration & Manufacturing Co., Los Angeles, were among five firms assigned quotas and allocating materials consideration for refrigerated display cases by the War Production Board.

GAS STORAGE HOLDER—Stacey Bros. Gas Construction Company (one of the Dresser Industries) has been awarded by the city of Long Beach contract for the construction of a five million foot telescopic gas storage holder.

THE WEST ON ITS WAY

AMPHIBIOUS TANKS—The Navy Department has signed two new contracts totaling $32,677,950 for production of "Water Buffalo" amphibious tanks in Food Machinery Corporation plants at San Jose and Riverside. These bring the corporation's backlog of unfilled orders to more than $207,000,000.

NEW NATURAL GAS FIELD—Standard of California has opened a new natural gas field four miles north of Rio Vista, the discovery well being located on property belonging to the California Packing Corporation and called Calpak No. 2, bottomed at 4,810 feet. On a test, the well produced at a rate in excess of 14,000,000 cubic feet of natural gas a day.

CHANGE OF NAME—Change of name of the Payne Furnace & Supply Company to "Payne Furnace Company," operating as a separate unit of the Dresser Industries which took over assets, is announced by the presidents of Dresser Industries and the Payne Company. No changes in management or general policies are anticipated.

PLANS BRANCH PLANT—Taylor Fibre Co., offices at 544 South San Pedro St., plans to establish a branch plant in Los Angeles representing an investment of around $100,000.

ACQUIRES PLANT—Thermoid of California, Inc., 630 South Clarence St., Los Angeles, has acquired the plant of the Grizzly Mfg. Co., makers of mechanical molded rubber goods.

EXPANSION—Adcraft Printers and Engravers, 3440 South Hope St., Los Angeles, have purchased a 15-acre tract on southwest corner of Soto Street and Fruitland Ave. An investment in land and buildings of $2,000,000 is planned for establishment of printing facilities for national publications.

DPC AUTHORIZATION—Phelps-Dodge Copper Products Corp., 6100 Garfield Blvd., Los Angeles, has received an additional $165,000 through Defense Plant Corporation for equipment.

NEW OFFICE BUILDING—Ideal Hardware Co., 2348 East 38th St., Los Angeles, is erecting a new office building and warehouse at Boyle Ave. and Leonis Rd. to contain 35,000 sq. ft.

EXPANSION—Arcturus Mfg. Corp., 1620 Euclid Ave., Santa Monica, has completed second unit of new buildings at 4301 Lincoln Boulevard, Los Angeles. This consists of a die-sinking plant containing 3,500 sq. ft. Expansion program at new location expected to cost $75,000 to $100,000. The company makes aircraft tools.

MORE TIRES—DPC announced authorization of the acquisition of material and equipment for the expansion of plant facilities of Pacific Tire & Rubber Mfg. Co., Oakland, at a cost of approximately $1,000,000. Pacific Tire & Rubber Mfg. Co. will operate these facilities, title remaining in Defense Plant Corporation.

FACTORY EXPANSIONS—Among the nine new projects representing $1,630,000 and the expansion of 12 enterprises, representing $412,000, reported by San Francisco Chamber of Commerce, were the following. Pacific Coast Maritime Board, 275 East 3rd St., south of Townsend, purchased 4,800 sq. ft. of property for construction of $1,000,000 project to feed 30,000 persons. Cafeterias and mobile kitchens are to be constructed and cafeterias will be operated at four other locations along the waterfront, the project operated by Pland-Evans Co.; U. S. Naval Drydocks, Hunters Point, will construct new outside machine and diesel overhaul shop at the drydocks at a cost said to exceed $312,000; M. A. Clark and C. R. Kerr, 464 Seventh St., established new paint manufacturing business with 3,750 sq. ft. floor space; Pacific Coast Industries, 344 Sacramento St., export packers, reported leasing 1,500 sq. ft. building at 339 Commercial St. for additional plant space; Reliance Trailer & Truck Co., 2765-16th St., purchased 200,000 sq. ft. industrial site with spur track at Jerrold and Napoleon streets for postwar expansion; Montobex Engineering Co., 275 S. Van Ness Ave., leased two-story 6,600 sq. ft. building for removal and expansion of tool and die manufacturing business; King-Knight Co., 776 Folsom St., leased 12,000 sq. ft. one-story building for consolidation of engine assembly and engineering business; Schou-Galls, Ltd., 250 Sacramento St., purchased a 10,000 sq. ft. building at 225 Sacramento St. for manufacturing of deck tackle and heavy ship to ship southsea fenders.

CUTBACK IN PRODUCTION—A cutback in the production schedule of cylinder assemblies being built for the AAF by Kinner Motors, Inc., of Glendale, was announced, the terminated portion of the contract amounting to $3,649,300, and another contract of a similar nature is now being negotiated. The contract is being terminated because the AAF has a sufficient quantity of this type of cylinder assemblies on hand to meet spare requirements.

THE WEST ON ITS WAY

PURCHASE—As part of an over-all western expansion program, t western division of Fruehauf Trailer Co. has purchased Trom Truck Equipment Co. of Portland. The Trombly shops will be operat in conjunction with Fruehalf's present plant in that city.

STOCK ACQUISITION—Bethlehem Steel Company has acquired ma of The Petroleum Equipment Company of Los Angeles. Bethlehem pla to continue the growth and expansion of the company, with spec emphasis on refinery and oil field drilling equipment, and the operati will be continued under the name of Petroleum Equipment Company a Petroleum Equipment International, with principal office and warehou at 2800 S. Alameda Street, Vernon.

COLORADO

ORGANIZATION AND EXPANSION—A new concern, Colora Fluorspar Mines, Inc., has been organized to take over and operate th mine and mill of the Colorado Fluorspar Corporation in Brown's Can near Salida. Capacity of the mill will be doubled by the addition o flotation cells and a classifier, and it is expected that 100 tons of fluo spar will be handled daily.

OREGON

LUMBER DRYING KILNS—A project costing a total of betwee $60,000 and $75,000 is under way for the construction and equipme of four kilns for drying pine lumber at the Heppner Lumber Compan Heppner. In addition, a new steam boiler, costing about $10,000, wi be installed.

PURCHASE OF TRACT—Oregon Timber Products Co. has purchase 11,600 acres of choice timber lands about 35 miles east of Roseburg The reported sales price approximates $600,000. There is the possi bility of a plywood plant being erected.

PLYWOOD MILL—The Aberdeen Plywood Company will build peeler mill on the Hoquarten Slough at Tillamook which will cos slightly less than $60,000.

REBUILD CANNERY—To replace plant destroyed by fire, Producers Cooperative Packing Company, Salem, will build new plant and office buildings on same site to cost about $110,000.

DPC AUTHORIZATION—Consolidated Freightways, Inc., Portland, was authorized by Defense Plant Corporation to provide automotive transportation equipment at a cost of approximately $175,000 for operation in the northwestern states.

NEW PLANTS—The Beall Pipe & Tank Corporation, Portland, manufacturers of frozen food lockers, are planning to build a new plant in Portland, and assembly plants in Spokane, Wash., and Billings, Mont.

PLYWOOD PLANT—The Umpqua Plywood Corporation has been authorized to proceed with construction of a $400,000 plywood plant at Roseburg. Privately financed, the plant will cover an area of 45,000 square feet.

UTAH

MORE TRUCKS—Defense Plant Corporation has authorized an increase in contract with Pacific Intermountain Express, Salt Lake City, to provide additional transportation equipment for operation in the northwestern states at a cost of approximately $150,000, resulting in an over-all commitment of approximately $400,000.

MILL OPENED—Vanadium Corporation of America has reopened the mill operated previously by it as an agent for Defense Plant Corp. at Monticello, San Juan County, after being closed a year ago.

WASHINGTON

SULPHATE PULP PLANT—Bloedel-Stewart & Welch, Ltd., Seattle, has begun construction on a $6,000,000 sulphate pulp plant at Port Alberni adjacent to the sawmill owned by the company. It will be capable of producing 50,000 tons of pulp a year from hemlock, fir and cedar wood waste.

Additional Spot Authorizatio For Reconversion to Civilian Production

San Francisco

A. J. Ruhlman & Co., steel venetian blinds.
Herbst Brothers, garbage cans and fireplace accessories.
Dohrmann Supply Co., aluminum commercial cooking utensils.
American Binder Co., brass file fasteners.
San Francisco Ornamental Iron Works, fireplace accessories.
Larkin Specialty Mfg. Co., toilet tissue cabinet.
Lando Products Co., metal slats for venetian blinds.
New Cutlery Co., cutlery.
Peerless Electric Co., hot plate disc stove.
Hermann Safe Company, safes and deposit boxes.
Enterprise Engine & Foundry Co., manhole covers.

Other Northern California

Oakland—Clare Goin & Helen Williams, wire coat hangers.
" Drugs Bros. Mfg. Co., tire servicing equipment.
" S. Loafea Mfg. Co., fruit picking pails.
" Aluminum & Brass Casting Co., Aluminum frying pa
" Sunset Venetian Blind Co., steel venetian blinds.
" Auto-Lite Battery Corp. of California, storage batteries.
" General Interiors, Consolidated, steel venetian blinds.
" Glen B. Mohr, doughnut fryers.
Berkeley—Tinsley Laboratories, telescopes.
South San Francisco—butter cutting machines.
Sacramento—Yuba Tank & Steel Co., tomato planters and pea diggers.
" Valley Mattress Co., innerspring mattresses.
West Sacramento—Hinshaw Mfg. Co., collars: reach-in refrigera boxes.
Fresno—Fiese & Firstenberger, irrigation pumps.
" C. C. Bussey Well Pipes Works, water well casings.
" W. C. Bradshaw Co., comm'l reach-in refrigerators.
" Fresno Agricultural Co., farm machinery items.
" Valley Foundry & Machine Works, brush shredders.

Fresno—Rothmann Hdw. & Imp. Co., land levelers.
Richmond—Ralph Edward Bergen, "pull" toys.
Emeryville—Jud Whitehead Heater Co., electric storage, water heater.
Belmont—Schor Mfg. Co., fishing tackle.
Selma—Selma Trailer Mfg. Co., vegetable and orchard wagons.
Merced—Laird Welding Works, lay loaders.
Redwood City—Currie Mfg. Co., steel venetian blinds.
San Jose—Food Machinery Corporation, turbine pumps for farm use.
Hercules—Albert V. Lindhome, hunting knives.
Los Gatos—Kavin Water Valve Company, poultry water flat control.
Vitalia—American Steel Co., water-well casing.
Tulare—Golden State Co., Ltd., steel tanks
Stockton—Fraser Furnace, vents and ells
" Mor-Pak Preserving Co., cooker

Los Angeles

Kinney Iron Works, manhole frames and covers.
Julius Ochakoff, wood cabinets and tables.
Donald C. Ware, household wooden chairs.
The Kimpy Company, innerspring mattresses and box springs.
Vering Mfg. Company, beverage bottle cooler.
Donald C. Ware, sofa beds, box springs.
Superior Fireplace Company, fireplace space heaters.
Vogue Venetian Blind Company, metal venetian blinds.
Western Industrial Engineering, loadmeter.
H and H Optics, relay lens holder.
Mole-Richardson Company, photographic lighting equipment.
American Coffee Urn Mfg. Co., stainless steel thermo casks
Craft Furniture Mfg. Co., upholstered furniture
Dr. JoWit Laboratories, egg beaters
Joe W. Feldner, wire lamp shade
Frank E. Gardner, synthetic rubber mats
Hydrospeed Scraper Equipment Co., land levelers
Kinney Iron Works, manhole frames
Martin Iron Works, concrete pipe making machines
Mellus Bros. & Co., tractor, beach and lawn umbrellas
Hayes Pagel, kitchenware, aluminum
Special Electric Laboratories, portable electric lamps
Trepte Wire & Metal Works, utility hand and neck mirrors
Stanley A. Wardle, wooden furniture

Other Southern California

Burbank—Johnny Headington, grass catchers and orchard heaters.
" Fred E. Orr, wire laying cage for hens.
Pasadena—Hayes Spray Gun Company, agricultural spray gun.
Riverside—G. A. Carpenter, beekeepers supplies.
Southgate—C and T Machine Company, cultivators.
" Davenport Mfg. Company, 8660 Atlantic Blvd., plows, spiketooth, spring, and offset disc harrows, field cultivators, land levelers, and scrapers.
Tujunga—D. F. Dunham, 7290 St. Estaban Street, agricultural irrigation sprinklers.
Fillmore—Corl & Fleming, harrows, cultivators, spreaders, cyclone weeds, scrapers and implement carriers
Hollywood—Highland Mfg. Co., farm irrigation valves
Glendale—Winfield Mfg. Co., auto and truck bumper jacks
Pasadena—More-Lite Venetian Blind Co., wood venetian blinds
San Gabriel—Ronzoni & Hastain, unfinished furniture
Santa Monica—Atlas Company, metal venetian blinds
Shafter—Shafter Machine & Farm Implement Repair Shop, potato diggers, land level planes
Van Nuys—Albright Mfg. Co., toys, furniture, juvenile sets

WESTERN TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND SELL INDUSTRIAL EQUIPMENT AND MATERIALS

Donald S. Sprague has been appointed to head the aviation department of **Turco Products, Inc.**, Los Angeles. Sprague has had 17 years of service with the Douglas Aircraft Company, Inc., where since 1936 he managed the customer service department of all Douglas plants, and the Douglas foreign field service division.

L. R. Hawkins, who served three years in the tools branch of the War Production Board, has been returned to district managership at Los Angeles of the **Warner & Swasey Company,** Cleveland, and Henry Herkner, pinch hitter in his absence, has been transferred to Newark, New Jersey.

Dee Breen has resigned as western division sales manager of the El Monte, Cal. plant of Littlefuse, Inc. to become sales manager for the **Universal Microphone Co.,** Inglewood. **Cecil L. Sly,** vice president and sales manager of Universal, now becomes director of sales, a newly created post.

E. S. Hudson is the newly-appointed forging engineer and metallurgical consultant for **Western Forge & Tool Works,** Oakland, coming to the firm with 12 years' experience in naval work along lines of heat treatment, metal working and metal forming of all types. He is, and has been for the past three years, a member of the executive committee of the American Society of Metals.

At the annual meeting of the **American Machine Tool Distributors' Association** held at Hot Springs, Virginia, **D. N. Macconel,** Machinery Sales Company, Los Angeles, was elected second vice president to serve for the ensuing year.

J. Harold Mitchell, for the past four years tooling engineer with Douglas Aircraft Co., has joined the western staff of **George K. Garrett Co.** as field engineer. Mr. Mitchell will be permanently located in a Portland, Oregon office which the company is opening to serve the Northwest territory.

Allen G. Jones, formerly Pacific District manager of General Electric Company's central station-transportation department, will assume the duties of **Raymond M. Alvord,** commercial vice president, San Francisco, as manager of apparatus sales. Mr. Jones' headquarters will continue to be in San Francisco, with jurisdiction over the area of California, Arizona, Western Nevada and the Hawaiian Islands. Mr. Alvord becomes a member of the president's staff.

The Paraffine Companies, Inc., announce the formation of a Division of Overseas Trade, with **R. R. Marsh** as manager.

Dan Peterson, who for the past six years has represented **Pioneer Flintkote** boxboard container and folding box interests in the San Francisco Bay Area, recently moved to Los Angeles to become director of sales for the company's container division. **Clyde E. Hopkins,** packaging engineer, associated with Pioneer Flintkote for 11 years, was appointed to succeed Peterson in the Bay Area.

Robert E. Baxter has joined the San Francisco staff of **McKinsey and Company,** management consultants, as an associate in distribution and marketing problems. Mr. Baxter has been director of research for the Los Angeles Times for the past eight years, where he developed the Los Angeles Research Jury.

Five honorably discharged veterans of World War II have joined or re-joined the sales department of Moore Business Forms, Inc., Pacific Manifolding Book Division of Los Angeles. They are: **Ed Dugan,** discharged from the paratroopers; **Harold Hardwig** of Los Angeles, one year paratroopers; **Carl Holmgrain** of Oakland, three years Marine Corps; **Lewis Hess** of San Francisco, nine months Army Air Corps; **Roy Rose** of Los Angeles, three years 106th Infantry.

The American Sheet Metal Works, Inc., Portland, has formed American Steel Warehouse, Inc. to conduct a steel jobbing business in Portland. **H. E. Hedinger,** president of the new organization, expects the warehouse now under construction, to be finished by June.

John H. Dooley has been transferred to San Francisco to become the Bay Area representative for the **Shellmar Products Company,** replacing **H. S. Dunkel,** who has been made assistant sales manager of Shellmar's Pacific Coast Division, Pasadena branch office.

R. E. Penny has been appointed Los Angeles branch manager, Crane Company, Chicago, succeeding **D. D. Updergraff,** resigned.

Thomas W. Harris, former executive of Basic Magnesium, Inc., Las Vegas, Nevada, has joined the staff of the **Wilson and George Meyer and Company,** Los Angeles, distributors of industrial and agricultural chemicals, plastics, foundry coke, and pig iron.

Richard G. Lippman, honorably discharged from navy service recently, has opened his own business under the name of the **Packaging Sales Company,** 352 Coleman Building, Seattle 4, Washington. In his navy duties he was concerned with materials handling equipment and has taken on the "Weld-Belt" line manufactured by the West Bend Equipment Corporation of West Bend, Wisconsin.

Fred F. Alleman has been appointed district sales manager for the Southern California area by **Titan Valve & Manufacturing Company** of Cleveland. Mr. Alleman's headquarters will be at 407 Van Nuys Building, Los Angeles.

Colonel O. K. Ga retired from the A in November 194 resumed his fo association with bearings division **Joseph T. Ryerso Son, Inc.** Col. G has his headquarter the company's di sales office at 816 Fifth Street, Los A geles, and is in ch of West Coast sale Ryertex non-metallic bearings and Cyco bitt metals.

Milton W. Allen has been appointed representative for the **National Screw & M facturing Co.,** Cleveland, in the states of C rado, Utah, Wyoming, New Mexico, and M tana. Mr. Allen's headquarters will be Denver.

B. F. Goodrich Company is opening a P cific Coast office at 355 Brannan Street in S Francisco, with **John T. Staker** as general m ager.

The Western division of **Fruehauf Tra Company** has announced the purchase **Trombly Truck Equipment Company,** P land, under management of **W. J. Jarvis,** P land branch manager of Fruehauf.

Robert E. Blasen, veteran of three m European campaigns and just retired as l tenant colonel in the Army Engineers, has b appointed an application engineer for the S Diego, Calif., area by the **Westinghouse El tric & Manufacturing Company.**

James A. Hawkesworth has been appoin as representative for the northwestern terri covering Washington, Oregon, northern C fornia and portions of Montana and Idaho f **Graton & Knight Company,** Worcester, Ma

Howard P. Strother, formerly for thirteen years with the B. F. Goodrich Company in every department of the tire business, has joined the **White Motor Co.** as wholesale manager, serving White distributors and dealers in So. California, Arizona and southern part of Nevada.

Coast Marine Engineering Corporation, f the past four years engaged as exclusive desig agent for the U. S. Navy in southern Californ for battle damage replacement, repair and con version, of which **E. S. Hardesty** is president, has opened offices at 111 New Montgomery St., San Francisco, planning to make this office its headquarters for the design of postwar ves sels. **Edward F. Dolan** is vice president; **A. G. Cope,** secretary-treasurer; and **M. Palmero,** na val architect.

Paul Wineman has been named supervisor of box sales for **Longview Fibre Co.,** district offices.

Glenn L. Eldredge has been appointed by **The American Photocopy Equipment Company** of Chicago as field representative for Seattle and surrounding territory. **Don C. Jordan,** formerly with the Permutit Company, has been appointed field representative for Spokane and surrounding territory.

THE SHOWCASE

186

Glove for Wire Strappers—A special type of hand protection, this new glove is made on the flexible, seamless palm pattern with extra palm patch of chrome tanned cowhide for extra service. The base glove is grain leather, and fin-

gers and thumbs are left open end to further increase flexibility and permit easy picking up of tape, or wire, small tools, etc. Also has an open back for coolness. In sizes for men and women. *Industrial Gloves Company, Danville, Illinois.*

187

Boring Bars—Boring bars with separate cutters in sizes below ⅜ in. have never before been generally available, yet the new Clark precision lever-lock boring bar is designed for use without bushings or adaptors, requiring no special clamps or holders. The parallel Clark adjustable tool holders hold it securely and together make a practical combination. Made from selected tool steel and heat treated for maximum rigidity; the modern design and sturdy construction of these tools assures accuracy in precision internal boring and threading. The exclusive lever-lock feature securely grips the tool bit in such a way that boring or threading to the bottom of a hole is possible without interference from set-screws or bolts. *Robert H. Clark Co., Beverly Hills, Calif.*

188

Rivet Gun—A new, compact, lightweight rivet gun, the G-35, designed for installing Cherry blind rivets in hard-to-get-at blind spots, operated with one hand, installs the rivet from one side of the job, with a pulling force, thereby eliminating the necessity of a man on the other side of the rivet. Gun is small, compact, flexible, measures only 11½ in. in length, weighs about 1½ pounds, and the pulling head is notched. *Cherry Rivet Co., Los Angeles.*

189

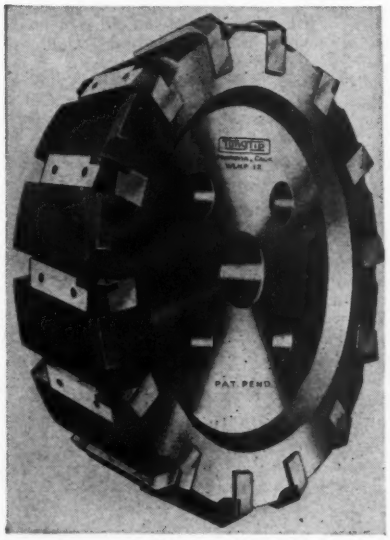
Merco Centrifugal—Employed to separate solids from slurries, Merco centrifugals operate with a continuous feed and discharge of the separated products. As the solids are concentrated in the centrifugal rotor, they are washed, countercurrently, and carried out of the machine in fresh liquor. Due to the high gravity effects developed, separation is rapid and thorough. The material is totally enclosed at all times and is therefore subjected to an absolute minimum of atmospheric contamination. *Merco Centrifugal Company, Hobart Bldg., San Francisco.*

190

Floor Machine—This heavy duty floor machine, fitted with 16 in. factory-wound steel wool roll, can be operated by one man, and burnishes dirt from the floor, the light soilage going into a large heavy-fabric bag and the heavy soilage into a large removable hopper by centrifugal action of the steel wool roll .Features include a two speed 2½-5 h.p. electric motor geared to provide drum speeds of 850 r.p.m. or 1725 r.p.m. Extra attachments are also provided. *G. H. Tennant Co, Minneapolis, Minn.*

191

Milling Cutter—The TUNGTIP inserted-tooth milling cutter illustrated consists of carbide-tipped inserted teeth rigidly locked into the tool body without extraneous parts and provided with a precision flat back and serrated front face, insuring uniform clamping pressure over the entire length of the insert. This rigid locking maintains the blade in correct position regardless of



cutting pressure. A simple, ingenious adjusting screw mechanism provides for precise adjustment of the insert to within .003 in. thus eliminating rough grinding of inserts. Replacement inserts are provided with the face of the carbide finish ground and the cutting edges rough ground to reduce user's maintenance cost. TUNGTIP inserted-tooth cutters are available in face mill and half-side mill styles. *Lowell & Grayson, Monrovia, Calif.*

192

Machine Tool Cabinet-Bench—The machine tool cabinet-bench illustrated has a heavy steel top which makes a sturdy mounting for small grinders and vices. The bottom shelf and ad-

justable center shelf furnish 12 square feet of storage space. It is available in two models: No. 2345-11, 36 in. wide, 24 in. deep, 34 in. high. Bottom shelf 7½ in. above floor. *Lyon Metal Products, Inc., Aurora, Ill.*

193

Utility Kit—This mounted point Utility Kit MP-21 combines 20 carefully selected mounted point items with an Electrolon dressing stick 5 x ½ x ½. The points are mounted on stainless steel mandrels 1½ in. long and ⅛ in. in diameter, usable on all high speed grinders, whether air, electric or flexible shaft. *Abrasive Company, Philadelphia, Pa.*

194

Scale Elimination—A new form of washer compound employing special sequestering agents to prevent the formation of calcium and magnesium deposits and soften old scale so that regular use results in complete removal of scale deposits from the machine, has been announced by the *Kelite Development Laboratories, Kelite Products, Inc., Los Angeles.*

195

Telechron Motor—A new timing and control motor with terminal shaft speed of one revolution per hour has been developed, designed to meet control manufacturers' demands for a slow speed, totally enclosed motor for use in timers, thermostats, oil burner and coal stoker controls and other apparatus in which minimum space and slow speeds are necessary. This new motor has an input rating of 2 watts and can be furnished in other speeds up to and including six revolutions per hour. A special oil gland has been built into the terminal shaft bearing, and the terminal shaft is concentric with the outer case of the motor. *Warren Telechron Company.*

196

Blind Plastic Grommet—The "Des- Grommet," composed of two parts molded from a special non-inflammable formula of lumarith, is so designed that the two parts may be applied from one side only by means of a special tool. To install the "Des-Grommet," it is slipped onto a special tool and thrust through a hole

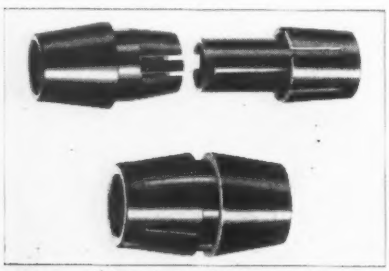


Fig. 1 "Des Grommet" Components (Top) and Assembled (Bottom)

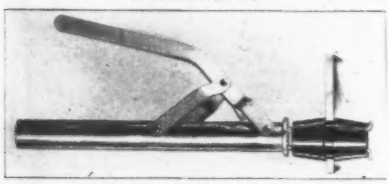


Fig. 2 Tool for installing "Des Grommet"

in the partition. As the grommet is drawn together, an under-cut section on one half is engaged wih a spring locking section on the other. The tool then forces the two sections together, locking them into one integral unit at the point at which the partition stops further movement. Furnished in a wide range of sizes, and colored for identification purposes. *Victory Mfg. Co., South Pasadena, Calif.*

197

Plastic Coating Tank— A small tool room model hot dip tank specifically created for dipping equipment for heating and melting plastic swin coatings, is built on the double-boiler principle and electrically heated by means of a 1200 watt specially designed immersion element encased in a liquid-proof cover with heating coils sealed within steel blades, with hot oil tubes placed along the length and width of the inner vat to bring added heat from within the melting compound itself. Dipping space 16 in. long by 6½ in. wide by 6 in. deep, with approximately 6 in. of length devoted to a separate melt section with removable dividing partition of expanded metal to permit adding new compound to the tank without disturbing dipping operations. *Aeroil Burner Company, Inc., West New York, New Jersey.*

198

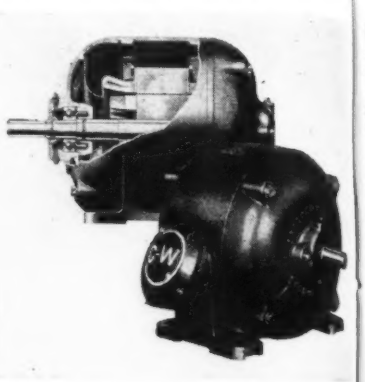
Self-locking Pin—New self-locking DRIV LOK pins, designed to replace more expensive taper pins, keys, cotter pins, set screws, rivets, etc., and which are pressed or driven into standard drilled holes, have four flutes on the surface parallel to the axis. Length and position of the flute can be controlled accurately, so that fully or partially grooved pins are available. When pin is inserted in a drilled hole, raised edges are compressed inwardly, providing resilient, self-locking element to hold indefinitely under vibration or shock conditions. These are available in sizes from 3/64 in. to ½ in. diameter and from 3/16 in. to 4½ in. in length, in any material, and in a wide variety of types. *Drit-Lok Pin Company, Chicago.*

199

Shell End Mills—Small standard shell end mills with brazed-in blades made of Haynes Stellite cobalt-chromium-tungsten alloy are furnished with blades of either Haynes Stellite 98M2 or Star J-Metal brazed into a steel body. Diameters range from 1¼ to 6 in., with face thicknesses from 1 to 2¼ in. *Haynes Stellite Company, New York.*

200

Protected Type Motor—A new motor, combining the surplus capacity of the conventional open motor with protection against dripping liquid, falling metal chips and other foreign matter, in sizes up to and including the 5-frame, is offered by Joshua Hendy Iron Works. There are no openings in the frame or shield above the horizontal center line, and centrif-



gal seals permit use of softer grease for better lubrication and longer bearing life. Alucast rotor construction, in which the bars, fans and end rings are cast in one operation from aluminum alloys, is employed. *Crocker-Wheeler Division of Joshua Hendy Iron Works, Ampere, New Jersey.*

YOURS FOR THE ASKING

1698

Self-Priming Centrifugal Pumps—A new treatise dealing with this subject in an objective manner on a new and increasingly important kind of pump is offered by *Marlow Pumps, Ridgewood, New Jersey.*

1699

Flux for Silver Soldering—A new four-page bulletin describes Superior No. 6 Flux for silver soldering and gives detailed instructions for its use. Complete price information and laboratory and production test reports are included. *Superior Flux Company, Cleveland, Ohio.*

1700

Table Top Chain Belts—A new catalog on Rex table top chain belts is announced, which describes and illustrates the chain and its design features in detail and showing its application in bottling, labeling, sealing, capping and other package or small part handling processes. *Chain Belt Company, Milwaukee, Wisconsin.*

You owe it to yourself to keep posted—only the efficient business survives under the strain and pressure of the war effort. Literature listed in these columns may be just the answer to your need for greater production, substitute materials or knowledge of how to care for your equipment. Just drop a note to Western Industry, 503 Market St., San Francisco, and copies will be forwarded to you. If you do not use business letterheads, please name your company affiliation.

1701

Oxy-acetylene Pipeline Distributing Systems—Victor Equipment Company has issued an 84-page book giving a comprehensive review of this subject, from the production of calcium carbide and acetylene gas to the equipment needed for oxy-acetylene distributing systems—replete with illustrations, charts, and easily-read engineering data. *Victor Equipment Company, San Francisco.*

1702

Quality Control—A new case-bound pocket-size handbook of 140 pages with 200 photographs, diagrams, charts, and tables, giving pertinent information for the precision measuring methods required in scientific inspection is offered by *Continental Machines, Inc.*, manufacturers of DO-ALL products, *Minneapolis, Minn.*

1703

Industrial Explosives—The Hercules Powder Company has issued a new booklet listing Hercules chemicals, industrial explosives and approximately fifty industries which they serve, also an indication of postwar applications for chemicals in plastics, paints, textiles, film, adhesives and paper is given. *Hercules Powder Company, Wilmington, Delaware.*

1704

Industrial Electronics—General Electric is offering a new industrial electronics catalog which is a complete review of present-day industrial electronic applications. Colorful and plentifully illustrated, the book is designed to inform management just what is available for use in plants right now. *General Electric Co., San Francisco.*

1705

Safety Heaters—Describing their new line of safety heaters, the Precision Scientific Co. offers illustrated bulletin with tables and temperature chart. *Precision Scientific Co., Chicago, Ill.*

1706

Materials Handling—Bulletins Nos. 1 to 10 are ready, published by Automatic Transportation Company, for manufacturers and distributors and dealing with actual operating methods of materials handling. Each bulletin consists of four to six pages and is based on plant interviews and the study of methods. Three or four bulletins at a time will be sent to enquirers. *Automatic Transportation Co., Chicago, Ill.*

1707

Air Power—"A Little Air Power Will Do Many a Big Job," is the title of a new 24-page booklet of 70 photographs with minimum of text showing how to put familiar air-operated equipment to work in new ways or use compressed air to increase production and secure greater economy. *Ingersoll-Rand Co., New York, N. Y.*

1708

Maintenance Welding—Describing fully Eutectic's low-temperature welding rods for plants and their welders, Eutectic offers a six-page folder. Also many suggestions for salvaging parts which were thought ready for the junk pile and putting them to work again. *Eutectic Welding Alloys Co., New York, N. Y.*

1709

Internal Boiler Feed Water Treatment—This is the title of a pamphlet which is part of the proceedings of the Master Boiler Makers' Association, discussing current methods of preventing scale and corrosion. Emphasis is placed on production of pure steam, prevention of foaming and elimination of excessive blowdown. Theory, application and results of organic all-colloidal treatment and after-treatment are fully discussed. *American K. A. T. Corp., New York, N. Y.*

1710

Condenser—A folder describes the Dawes condenser, showing a cross section of condenser and capacity chart. *Contract Engineering, San Francisco.*

YOURS FOR THE ASKING

(Cont'd from Pg. 85)

1711

Machine Cutting Tips—A new 12-page bulletin with cross-sectional drawings and photographs, charts and tables, describes the Airco "45" and "45M" high speed machine gas cutting tips which control the expansion of cutting oxygen. *Air Reduction Sales Co., New York City.*

1712

Contract Settlement Training Guide—To prepare war contractors for handling contract settlement, a new Contract Settlement Training Guide has just been published by the Contract Settlement Advisory Board's Committee on Training. Designed to provide basic information for termination coordination committees, the new program gives the contractors actual practice in filling out settlement proposal forms and solving practical problems dealing with such subjects as termination inventories, scrap disposal, etc. The booklet outlines the procedures and principles to be followd in both national and local training programs. *Office of Contract Settlement, Federal Reserve Bldg., Washington, D.C.*

1713

Tube Cleaning Suggestions—Correct steps to be taken before, during and after a tube-cleaning operation to insure highest efficiency are outlined in a new service bulletin just received from Thomas C. Wilson, Inc. Supplied in the form of a step-by-step check list, this information covers selection of appropriate equipment, proper cleaning procedure, care of cleaning equipment, and listings of types and sizes of motors, cutters, and other accessories required. Illustrations identify the equipment described and recommended. *Thomas C. Wilson, Inc., Long Island City, New York.*

1714

Standard Conveyors—A new eight-page booklet entitled "Standard Conveyors Do It Better, Faster, Easier, and Cheaper" gives detailed information on gravity and portable conveyors. *Standard Conveyor Company, No. St. Paul, Minn.*

1715

Blast Cleaning—A new 24-page booklet featuring 21 unusual problems in blast cleaning that required special "made to measure" equipment for production handling is being distributed by the Pangborn Corporation. Almost every known method of handling metals to be blast cleaned is represented. *Pangborn Corporation, Hagerstown, Maryland.*

1716

Technicolor Film on Arc Welding—A new technicolor sound motion picture titled "Magic Wand of Industry—Arc Welding," just released by the Lincoln Electric Company, Cleveland, Ohio, portrays the dramatic progress of arc welding from its beginnings to its present vital wartime role. There are also scenes which take the audience into the welding world of tomorrow. Produced at the request of the U. S. Bureau of Mines which is releasing the picture under the title "A Story of Arc Welding," this 25-minute presentation, filmed under the technical direction of Lincoln welding engineers, was staged and photographed in practically every major industry including airplane factories, shipyards, refineries, steel mills and Shasta Dam. In addition to being educational and informative, the film was produced also to attract men and women into the many arc welding jobs that now need to be filled. Film available in 16 mm. and 35 mm. prints to business groups, technical societies, schools and colleges and industrial plants at no charge except transportation. *The Lincoln Electric Co., Cleveland, Ohio.*

1717

Barometric Condensers—A new bulletin covers both the disc-flow and ejector-jet types, explaining the uses, advantages and operation of each. Several schematic diagrams illustrate how these vacuum-producing systems work and photographs show condensers in various industries. *Ingersoll-Rand Company, New York, New York.*

1718

Industrial Safety Chart—Charts which ... be torn out and hung on the walls of ... illustrate safety methods for operators of ... presses in booklet. Charts on different ... trial equipment safety will be issued ... unbound, and may be obtained in ... *U. S. Department of Labor, Division of ... Standards, Washington, D.C.*

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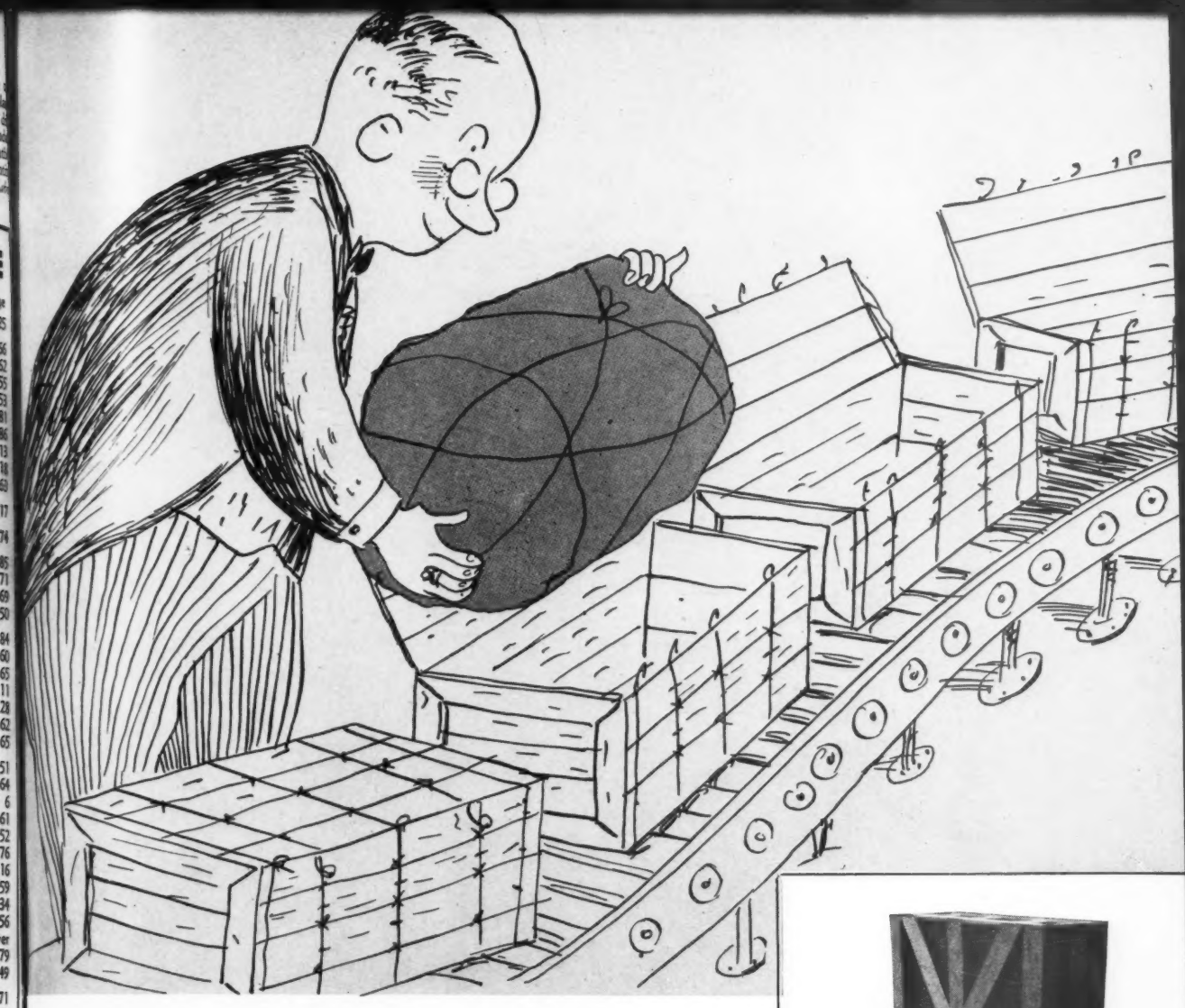

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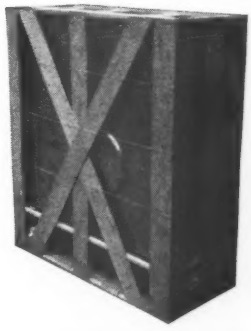

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